Annual Congress 2015

The ROYAL COLLEGE of OPHTHALMOLOGISTS

Final Programme and Abstracts

19-21 May 2015 - The ACC Liverpool

acc Liverpool

New AlaHeavy new possibilities

see us at Stand J

New AlaHeavy, from Alamedics Germany is a new 'heavy oil' which addresses some of the shortcomings of similar products that have been available in the past.

AlaHeavy is a silicone oil which has been manufactured to be of a higher density than water. AlaHeavy is not a mixture. AlaHeavy is not oil with added density-enhancing surfactants, such as alkanes or alkenes. That means no separation during storage, or in the eye, as well as less chance of an inflammatory reaction within the eye.

AlaHeavy also gives you 2 further 'bonus' advantages. It exhibits a higher density but lower viscosity than similar products currently on the market. Therefore, not only is it more effective as a heavy tamponade, but it is also easier to handle.

ala medics®

To request a free sample or data sheets please contact Altomed Customer Services on 0191 5190111 or email: sales@altomed.com

altomed

TUESDAY 19 MAY 2015

09.00 – 10.30

PRESIDENT'S SESSION
Welcome & Strategy
Caroline MacEwen, RCOphth President
Advances in Medical Retina
Clare Bailey
The Use and Abuse of Profiling
George Spaeth
Glaucoma in Nigeria
Clare Gilbert

10.30 – 11.00 Coffee & Posters

11.00 – 12.30

Advances and Innovations in Paediatric Ophthalmology
Christopher Lloyd
Keratoconus
Stephen Kaye
Controversies in Modern Vitreoretinal Practice
Tom Williamson and Edward Lee
Neuro-Imaging
Paul Riordan-Eva
£ Retinal Imaging Course Part 1
Paulo Stanga and James Talks
Orbital Tumours and Inflammation
Cornelius René

12.30 – 13.30 Lunch

13.30 – 15.00

Paediatric Cornea
Susmito Biswas
The Many Faces of Primary Care Ophthalmology
Richard Smith
Refractive Surgery: Where Are We Now?
David O'Brart
Glaucoma & Ocular Surface Disease
Mohit Gupta
Inherited Retinal Systemic Disease
Marie Tsaloumas
£ Retinal Imaging Course Part 2
Paulo Stanga and James Talks

15.00 – 15.30 Tea & Posters

15.30 – 16.30

Rapid Fire Session
Andrew Dick

16.30 – 17.30

EDRIDGE GREEN LECTURE
A View On Glaucoma – Are We Seeing it Clearly?
David Crabb
Introduction by Ted Garway-Heath

17.30 – 19.00

Drinks Reception
For all speakers, delegates and exhibitors

WEDNESDAY 20 MAY 2015

08.00 – 09.00 Breakfast Meetings

Workshop for Practical Statistics
Richard Wormald
Breakfast With NIHR
Faruque Ghanchi
Grand Rounds: Glaucoma
David Broadway
Grand Rounds: Uveitis
Alistair Denniston

09.00 – 10.00

Ophthalmology Research – Real world Impact
Faruque Ghanchi
Peri-Ocular Oncology
Claire Daniel
Nystagmus – Congenital & Acquired
Irene Gottlob
How to Commission & Provide Treatment
Parul Desai and Richard Wormald
National Ophthalmology Database Audits
John Sparrow

10.00 – 11.00

THE KEELER LECTURE
Vision and Eye Disease in Art
Michael Marmor
Introduction by Richard Keeler

11.00 – 11.30 Coffee & Posters

11.30 – 13.00

Retinal Stem Cells
Andrew Lotery
International Ophthalmology
Matthew Burton
Inflammatory Eye Diseases - The Spotted Fundus
Miles Stanford
Glaucoma: Meet the Experts
Rupert Bourne and Peter Shah
Macular Degeneration: An Update
Ian Pearce

13.00 – 14.00 Lunch

13.00 - 14.00

SAS Forum

14.00 – 15.00

Rapid Fire Session
Miles Stanford

15.00 – 15.30

AGM

15.30 – 16.00 Coffee & Posters

16.00 – 17.00

DUKE ELDER LECTURE
Learning From Patients
John Sparrow
Introduction by Richard Harrad

17.00 – 18.00

Ophthalmic Trainees Forum

09.00 – 17.00

Allied Professions Day
Larry Benjamin and Janet Marsden

THURSDAY 21 MAY 2015

08.00 – 09.00 Breakfast Meetings

Innovations in Ophthalmic Education
George Saleh
Newly Appointed Consultants
Mike Burdon and Peter Shah
Grand Rounds: Oculoplastics
Ben Parkin
Specialist Commissioning
Alison Davis
Pensions and Investments
Peter McDonnell

09.00 – 10.30

Giant Cell Arteritis
Susan Mollan
Advances in VR
Robert MacLaren
Wet & Dry: Plastics & Surface
Bernie Chang and Sai Kolli
Diabetic Macular Oedema
Victor Chong
£ Imaging in Glaucoma Diagnosis and Monitoring Course Part 1
Rupert Bourne and Stephen Vernon

09.00 - 12.00

Training the Trainers
Melanie Corbett

10.30 – 11.00 Coffee & Posters

11.00 – 12.00

The Great Debate
Brian Little

12.00 – 12.15

Awards Ceremony

12.15 - 13.15

THE OPTIC UK LECTURE
Structure – Functional Relationships in Macular Dystrophies
Anita Agarwal
Introduction by Usha Chakravarthy

13.15 - 14.15 Lunch

14.15 – 16.00

Grand Rounds: Neuro-Ophthalmology
Magaret Dayan and Gordon Plant
Grand Rounds: FFA/Medical Retina
Anita Agrawal, Alan Bird and Adnan Tufail
Emergency Eye Care
Andrew Jacks and Tim Matthews
What Makes a Great Cataract Surgeon?
Larry Benjamin
£ Imaging in Glaucoma Diagnosis and Monitoring Course Part 2
Rupert Bourne and Stephen Vernon

16.00 Congress Close

09.00 – 16.00

GP Day
Seema Verma and Michael van Dessel

MONDAY 18 MAY 2015

09.30 - 17.30

Hall 1a & Galleria
Retina Day
Winfried Amoaku and Paulo Stanga

MONDAY 18 MAY 2015

09.30 - 17.30

Hall 1c & 3
Glaucoma Day
Peter Shah and Fiona Spencer

MONDAY 18 MAY 2015

09.30 - 17.30

Hall 1b & 11
Eye Movements Day
Mike Burdon and Tony Vivian

CONTENTS

EDRIDGE GREEN LECTURE
Professor David Crabb

David Crabb is Professor of Statistics and Vision Research in the School of Health Science at City University London. He gained a B.Ed. in Mathematics from the University of Oxford and then taught the subject in schools in London before becoming a fugitive of the classroom returning to study for an M.Sc. in Statistics at the University of Sheffield in 1991. He then went on to complete a Ph.D. in Statistics and Visual Science at City University in 1996. Following a post-doctoral position at University College London, working under the direction of Professor Fred Fitzke and Professor Roger Hitchings, he took up a lectureship in Statistics in the School of Biomedical Sciences at Nottingham Trent University in 1999 where he maintained his research interests in vision and ophthalmology. In 2005 he returned to City University to teach on the optometry programme and was made Professor in 2010.

KEELER LECTURE 2015
Professor Michael F. Marmor

Michael F. Marmor, M.D. is Professor and Past Chair of Ophthalmology at the Stanford University School of Medicine. He graduated from Harvard College and Harvard Medical School, and spent 3 years at the National Institute of Health studying basic neurophysiology. His ophthalmology residency was at Massachusetts Eye and Ear Infirmary. After residency he joined the faculty at the University of California, San Francisco for one year, and then moved to Stanford. He has been there since 1974, where he not only works in the School of Medicine, but also teaches undergraduates in the Program in Human Biology and is an Affiliate of the Stanford Center in Biomedical Ethics.

DUKE ELDER ORATION 2014
Professor John Sparrow

John Sparrow trained in London, Oxford and Leicester, taking time out for a DPhil on the lens in diabetes in Oxford. He was appointed in 1992 to a consultant senior lecturer post in Bristol and in 2000 he moved to the NHS as a Consultant Ophthalmologist while retaining honorary academic links as senior lecturer with the University of Bristol and subsequently also the LSHTM. He undertook a part time two year secondment as the connecting for health national clinical lead for ophthalmology, during which time he promoted specialty specific interoperable electronic working and gained approval for the cataract national dataset. In 2012 he was awarded an Honorary Professorship in Ophthalmic Health Services Research and Applied Epidemiology at the University of Bristol in recognition of his contributions to research in ophthalmology.

OPTIC UK LECTURE 2014
Professor Anita Agarwal

Dr. Anita Agarwal is a professor of ophthalmology at the Vanderbilt Eye Institute. Dr. Agarwal specializes in medical and surgical diseases of the retina and uvea and has a special interest in uncommon and inherited retinal diseases. She received ophthalmology residency training at the Postgraduate Institute in Chandigarh, India under the mentorship of Dr. Amod Gupta, and at the University of Florida, Gainesville. This was followed by a medical retina fellowship at Vanderbilt University under Dr. J. Donald M. Gass and a vitreoretinal surgical fellowship at West Virginia University under the mentorship of Dr. Lionel Chisholm. She returned to Vanderbilt University as an assistant professor in 1999. There, she worked alongside Dr. Gass, an opportunity that further enhanced their interaction and thereby her learning, ultimately taking over his clinical practice.

General Information

Registration opening hours
Monday 18 May 2015 8.00 – 16.00 (Sub-Speciality Day Only)
Monday 18 May 2015 16.00 - 18.30
Tuesday 19 May 2015 8.00 – 17.00
Wednesday 20 May 2015 7.45 – 17.00
Thursday 21 May 2015 7.45 – 15.00

Exhibition opening hours
Tuesday 19 May 2015 8.00 – 17.30
Wednesday 20 May 2015 8.30 – 17.30
Thursday 21 May 2015 8.30 – 15.00

Security
Delegates must wear their badge at all times. You will be asked to swipe your badge when you collect your registration bag and into the entrance to all Congress sessions. Please assist the stewards by having your badge ready. Please note that badges will be encoded for each day.

Language
The language of Congress is English.

Continuing Professional Development (CPD)
- To be awarded your CPD points you must swipe into every session or lecture that you attend.
- One CPD point per hour of educational activity is awarded at Congress.
- The total CPD allocation for the main Congress is 23 points: Tuesday 8 points, Wednesday 8 points and Thursday 7 points.
- The Retina day, Glaucoma day and Eye Movements day will be awarded 6 points.

Refreshments and lunch
Your fee includes welcome coffee, morning coffee break, two course lunch and afternoon tea. There will be a vegetarian option but we are unable to provide for any other dietary requirements. No refunds will be given for lunch not taken.

09.00 - 10.30 PRESIDENT'S SESSION **Hall 1a**

The President, Professor Caroline MacEwen, The Royal College of Ophthalmologists, London

The president's symposium opens the Congress and the speakers have been carefully chosen as world leaders in the fields of medical retina, glaucoma and international ophthalmology challenges. This session will be valuable and informative for all ophthalmologists irrespective of sub-specialty or stage in their career.

Welcome and Strategy
Professor Caroline MacEwen, The Royal College of Ophthalmologists, London

Advances in medical retina: A bright vision for the future
Miss Claire Bailey, Bristol Eye Hospital

The use and abuse of profiling
Professor George Spaeth, Wills Eye hospital/Jefferson Medical College, USA

Glaucoma in Nigeria: magnitude, challenges and strategies for a way forward
Professor Clare Gilbert, London School of Hygeine and Tropical Health

10.30 - 11.00 COFFEE & POSTERS **Exhibition Hall**

11.00 - 12.30 ADVANCES AND INNOVATIONS IN PAEDIATRIC OPHTHALMOLOGY **Hall 3a**

Chair: Professor Christopher Lloyd, Consultant Ophthalmologist, Manchester Royal Eye Hospital

This symposium will explore how exciting developments in medicine are changing our approach to paediatric disorders and features speakers who are all leaders in their field. Professor Graeme Black and Professor Paolo De Coppi will, with the aid of clinical examples, outline how advances in genomics and the use of pluripotential stem cells are enabling the development of personalised medical care and thus potentially transforming outcomes for children with rare and complex disorders. Mr Tony Vivian will discuss recent advances in paediatric strabismus management while Professor Tariq Aslam will review how the use of new technology and innovative software is improving imaging and diagnosis in paediatric ophthalmic disorders. This session will be relevant to all clinicians involved in the care of children.

11.00 - 11.05 Introduction and overview
Professor Christopher Lloyd, Consultant Ophthalmologist, Manchester Royal Eye Hospital

11.05 - 11.25 Genomics and personalised medicine in the 21st century
Professor Graeme Black, Consultant Ophthalmologist, St Mary's Hospital for Women and Children, Manchester

11.25 - 11.45 Advances in stem cell and regenerative medicine
Professor Paolo De Coppi, Consultant Paediatric Surgeon, Great Ormond Street Hospital, London

11.45 - 12.00 Advances and innovations in paediatric strabismus management
Mr Tony Vivian, Consultant Ophthalmologist, West Suffolk Hospital

12.00 - 12.15 Paediatric Ophthalmology - technology at the interface
Professor Tariq Aslam, Consultant Ophthalmologist, Manchester Royal Eye Hospital

12.15 - 12.30 Questions and Discussion

11.00 - 12.30 KERATOCONUS **Hall 1b**

Chair: Professor Stephen Kaye, Consultant Ophthalmologist, Royal Liverpool University Hospital

The management of patients with Keratoconus has changed significantly over the past five years. This session will provide a comprehensive update on, aetiology and genetics (Professor Colin Willoughby), diagnosis and management (Mr Stephen Tuft), structure of the cornea (Professor Keith Meeks), cross-linking (Mr Sajjad Ahmad) and surgery (Professor Stephen Kaye) for keratoconus. This will be followed by questions and discussion with the panel.

11.00 - 11.05 Introduction and overview
Professor Stephen Kaye, Consultant Ophthalmologist, Royal Liverpool University Hospital

11.05 - 11.20 Aetiology and genetics
Professor Colin Willoughby, Dept of Eye and Vision Science, University of Liverpool & Honorary Consultant Ophthalmologist, Royal Liverpool University Hospital

11.20 - 11.35 Diagnosis and progression
Mr Stephen Tuft, Consultant Ophthalmologist, Moorfields Eye Hospital, London

11.35 - 11.50 Corneal structure and biomechanics
Professor Keith Meek, Head of Biophysics Research Group, Cardiff University

11.50 - 12.05 Corneal cross linking
Mr Sajjad Ahmad, Consultant Ophthalmologist, Royal Liverpool University Hospital

12.05 - 12.20 Surgical options and outcomes
Professor Stephen Kaye, Consultant Ophthalmologist, Royal Liverpool University Hospital

12.20 - 12.30 Panel discussion and questions

11.00 - 12.30 CONTROVERSIES IN MODERN VITREORETINAL PRACTICE Hall 11
Chairs: Mr Tom Williamson, Consultant Ophthalmologist, St Thomas Hospital, London & Mr Edward Lee, Consultant Ophthalmologist, Epsom and St Helier Hospitals, Sutton

This session hopes to explore areas in vitreoretinal surgery where recent advances have changed practice. In particular the general ophthalmologist will be provided with information to allow appropriate referral of patients to vitreoretinal services. The speakers have been chosen as experts in their fields. Topics have been chosen to spread over the spectrum of subjects encountered in vitreoretinal surgery. In some instances patterns of referral and management are not yet set and discussion will hopefully help decision making.

11.00 - 11.15 Floaterectomy
Mr Alistair Laidlaw, Consultant Ophthalmologist, St Thomas Hospital, London

11.15 - 11.30 Ocriplasmin and the VR surgeon
Mr Richard Haynes, Consultant Ophthalmologist, Bristol Eye Hospital

11.30 - 11.45 When to refer for macular surgery
Mr David Yorston, Consultant Ophthalmologist, Gartnavel Hospital, Glasgow

11.45 - 12.00 Controversies around macular off RRD
Mr Edward Lee, Consultant Ophthalmologist, Epsom and St Helier Hospitals, Sutton

12.00 - 12.15 When to refer a diabetic for vitrectomy
Miss Louisa Wickham, Consultant Ophthalmologist, Moorfields Eye Hospital, London

12.15 - 12.30 Cataract surgery and vitrectomy
Mr David Steel, Consultant Ophthalmologist, Sunderland Eye Infirmary

11.00 - 12.30 NEURO-IMAGING Hall 1a
Chair: Mr Paul Riordan-Eva, Consultant Ophthalmologist, King's College Hospital, London

Neuro-imaging has an increasingly important role in the investigation of non-ocular visual problems and the elucidation of the mechanisms of cerebral processing of vision. The complexity of imaging protocols and the nuances of abnormalities identified generate challenges as well as valuable insights. In this session three highly experienced neuro-radiologists will discuss the current knowledge and clinical relevance of imaging abnormalities in inflammatory anterior visual pathway disease and cerebral venous disease and the current interventional techniques for cerebral arterial disease. The last talk will provide examples of recent developments in functional imaging with reference to vision. The session will provide an interesting update for everyone involved in ophthalmology and will be particularly relevant to clinicians of all levels of experience to augment their understanding of the strengths and limitations of neuro-imaging.

11.00 - 11.20 Inflammatory anterior visual pathway disease
Dr Ata Siddiqui, Consultant Neuro-radiologist, King's College Hospital, London

11.20 - 11.40 Cerebral arterial disease
Dr Timothy Hampton, Consultant Neuro-radiologist, King's College Hospital, London

11.40 - 12.00 Cerebral venous disease
Dr Steve Connor, Consultant Neuro-radiologist, King's College Hospital, London

12.00 - 12.20 Functional imaging of vision
Professor Tony Morland, Director of the Centre for Neuroscience, Hull-York Medical School

12.20 - 12.30 Discussion

11.00 - 12.30 ORBITAL TUMOURS AND INFLAMMATION Hall 1c
Chair: Mr Cornelius René, Consultant Neuro-radiologist, Addenbrooke's Hospital, Cambridge

High resolution orbital imaging and new molecular biology techniques have contributed greatly to a better understanding and more precise characterization of orbital disease, with the emergence of new diagnoses, such as IgG4 disease. Research in recent years has also led to better treatment modalities and improved outcomes. This symposium focuses on the clinical presentation, investigation and management of orbital tumours and inflammation, which together account for the majority of disease processes affecting the orbit. Aimed at specialists and non-specialists alike, it will be a useful update for ophthalmologists of all grades.

11.00 - 11.20 **The role of orbital radiology in diagnosis of orbital tumours and inflammation**
Dr Daniel Scoffings, Consultant Neuro-radiologist, Addenbrooke's Hospital, Cambridge

11.20 - 11.40 **Orbital inflammatory syndromes**
Mr Cornelius René, Consultant Oculoplastic Surgeon, Addenbrooke's Hospital, Cambridge

11.40 - 12.00 **Management of Orbital Inflammation**
Mr Bijan Beigi, Consultant Oculoplastic Surgeon, Norfolk and Norwich University Hospital

12.00 - 12.20 **Orbital tumours: Diagnosis and Management**
Mr Raghavan Sampath, Consultant Oculoplastic Surgeon, Leicester Royal Infirmary

12.20 - 12.30 **Questions and Discussion**

11.00 - 15.00 **RETINAL IMAGING COURSE (PAID COURSE)** **Hall 12**

11.00 - 14.00 **Part 1. Lectures & working lunch**
Chairs: Professor Paulo Stanga, Consultant Ophthalmologist, Manchester Royal Eye Hospital & Mr James Talks, Consultant Ophthalmologist, Royal Victoria Infirmary, Newcastle upon Tyne

The Retinal Imaging Symposium involves not only a series of lectures on a wide range of imaging techniques but also a series of educational retinal cases will be available on laptops to be worked through by the delegates with the session presenters. Delegates will be allocated into groups and the presenters will rotate between the groups to achieve one-to-one interaction.

The latest imaging modalities will be covered including Optos® 200° Wide-angle Fundus Fluorescein Angiography and Autofluorescence, Fourier-Domain OCT, Camera-based Indocyanine Green Angiography, Microperimtery, Retcam® imaging in children, Ultrasound Scanning Imaging and Ultrasound Biomicroscopy and Multispectral Optic Nerve Head Imaging, Imaging in Diabetic Retinopathy Screening as well as Imaging in Inflammatory Chorioretinal Diseases. The basic and latest concepts of Multiwavelength Imaging, Fundus Fluorescein Angiography and OCT interpretation will be presented in more detail.

New imaging techniques and clinical cases have been added to last year's program; Swept Source Infrared Wavelength OCT of vitreous and chorioretinal pathology, En- Face OCT, Angiographic OCT and OCT of Uveal Disorders, amongst others. Hands-on Fourier-Domain and Swept Source OCT, Slit-Lamp OCT and Wide-angle Fluorescein Angiography and Fundus Autofluorescence Imaging equipment demonstrations by Optos UK and Topcon UK will be available. Handouts with the slides of each presentation will be provided.

By the end of the symposium the delegates should have not only increased their knowledge in the interpretation of the results obtained with the presented imaging techniques but also be able to image patients themselves.

11.00 - 11.20 **Advances in OCT and Wide-Field Imaging: What do I need to know for 2015? Cross-Sectional, En-Face, Angiographic and Wide-Field OCT**
Professor Paulo Stanga, Consultant Ophthalmologist, Manchester Royal Eye Hospital

11.20 - 11.40 **Masterclass in the Combined Benefits of Stereo FFA, Indocyanine-green Angiography (ICG), Fundus Autofluorescence and OCT**
Mr James Talks, Consultant Ophthalmologist, Royal Victoria Infirmary, Newcastle upon Tyne

11.40 - 12.00 **Paediatric Posterior Pole Pathology: Retcam® Fundus Photography and Fluorescein Angiography and Ultrasound Biomicroscopy (UBM)**
Mr Susmito Biswas, Consultant Ophthalmologist, Manchester Royal Eye Hospital

12.00 - 12.20 **Translating Imaging Innovation into Clinically Meaningful Evaluation**
Professor Steven Schwartz, Professor of Ophthalmology, Jules Stein Eye Institute, Los Angeles, USA

12.20 - 12.40 **Overview: How should we Image Uveitic Diseases in 2015?**
Professor Sunil K Srivastada, Cole Eye Institute, Cleveland, USA

12.40 - 13.00 **Round table and questions from audience with working lunch**

13.00 - 13.20 **New Imaging Techniques for the Diagnosis and Management of High Myopia**
Professor Magdy Moussa, Professor of Ophthalmology, Tanta University, Egypt

13.20 - 13.40 **New imaging techniques in inherited retinal dystrophies**
Professor Victor Gonzalez, Clinical Professor, Valley Retina Institute, McAllen, Texas, USA

13.40 - 14.00 **Round table and questions from the audience**

14.00 - 15.00 Part 2. Case discussions and demonstrations
Demonstrators: James Talks, UK; Paulo Stanga, UK; Susmito Biswas, UK; Steven Schwartz, USA; Sunil Srivastada, USA; Victor Gonzalez, USA; Magdy Moussa, Egypt; Bart Leroy, Belgium; Jane Gray, UK; Catharine Chisholm, Topcon UK; Anne-Marie Cairns, Optos UK

A series of educational retinal cases will be available on laptops to be worked through by the delegates with the session presenters. Delegates will be allocated into groups and the presenters will rotate between the groups to achieve one-to-one interaction.

Hands-On equipment demonstrations by Optos UK and Topcon UK. By the end of the symposium the delegates should have not only increased their knowledge in the interpretation of the results obtained with the presented imaging techniques but also be able to image patients themselves.

A Buffet Lunch will be served on-site to all attendees and as part of the program.

12.30 - 13.30 LUNCH Exhibition Hall

13.30 - 15.00 PAEDIATRIC CORNEA Hall 3a
Chair: Mr Susmito Biswas, Consultant Ophthalmologist, Manchester Royal Eye Hospital

This session will cover the challenges around managing, chronic corneal disorders that affect children, such as severe ocular surface diseases. Topics will include management of children with severe allergic eye disease and new concepts that underpin treatment. Stephen Tuft of Moorfields will discuss his approach and experience of management of children with chronic blepharokeratoconjunctivitis. The advent of anti-VEGF treatment has seen widespread applications extending to children with corneal neovascularisation. Samer Hamada, Corneal Surgeon form the Corneaplastics unit, East Grinstead, will discuss his experience of this and other strategies to deal with this problem. Colin Willoughby of Liverpool University and St Paul's Eye Unit will then review the latest developments in the genetics of corneal dystrophies in children. In addition, the panel will present challenging and problematic paediatric corneal and external eye disease cases. We hope that this will be an interesting and interactive session for both corneal specialists as well as paediatric ophthalmologists.

13.30 - 13.50 New developments in treatment of ocular allergy in children
Mr Susmito Biswas, Consultant Ophthalmologist, Manchester Royal Eye Hospital

13.50 - 14.10 Management of corneal neovascularisation in childhood keratitis
Mr Samer Hamada, Consultant Ophthalmologist, Queen Victoria Hospital, East Grinstead

14.10 - 14.30 Challenges in the management of blepharokeratoconjunctivitis/paediatric ocular rosacea
Mr Stephen Tuft, Consultant Ophthalmologist, Moorfields Eye Hospital, London

14.30 - 14.50 Corneal dystrophies in children - an update on genetics and management
Professor Colin Willoughby, Dept of Eye and Vision Science, University of Liverpool & Honorary Consultant Ophthalmologist, Royal Liverpool University Hospital

14.50 - 15.00 Paediatric corneal case presentations

13.30 - 15.00 THE MANY FACES OF PRIMARY CARE OPHTHALMOLOGY Hall 1c
Chair: Mr Richard Smith Consultant Ophthalmologist, Stoke Mandeville Hospital, Aylesbury

A rough definition of primary care ophthalmology is the point where the patient with an eye problem first gets a diagnosis and a management plan. It occurs in a variety of health care settings, involving a variety of professionals, as will be illustrated in five short presentations from contrasting primary care ophthalmology services. Primary care ophthalmology is a challenging and stimulating environment in which to work. If you are involved in delivering, leading, planning or commissioning a primary care ophthalmology service, this session is for you.

13.30 - 13.45
Miss Seema Verma, Consultant Ophthalmologist, Moorfields Eye Hospital, London

13.45 - 14.00
Dr Nick Cook, Central Surgery General Practice, Rugby

14.00 - 14.15
Ms Sali Davis, CEO, Optometry Wales

14.15 - 14.30
Miss Suzanne Dorey, Consultant Ophthalmologist, The Medical Specialist Group, Guernsey

14.30 -14.45
Mr Aravind Reddy, Consultant Ophthalmologist, Royal Aberdeen Children's Hospital & Mr Stephen McPherson, Optometrist, McPherson Optometry, Aberdeen

14.45 - 15.00 Questions and Discussion

13.30 - 1500 REFRACTIVE SURGERY: WHERE ARE WE NOW? Hall 1b
Chair: Mr David O'Brart, Consultant Ophthalmologist, St Thomas Hospital London

Refractive surgery is now an established part and one of the commonest interventions in modern ophthalmological practice. This symposium is aimed at consultants, trainees and allied professionals alike. Whatever ophthalmological sub-specialty we may practise, we will encounter patients who have undergone or who are planning to undergo such techniques and require our advice. In addition, anyone undertaking routine cataract surgery must consider optimising the post-operative refractive error to the patient's needs. This session has been designed to provide an update in the latest approaches to the surgical correction of refractive errors and encompasses a series of lectures on innovative techniques by some of the UK's most experienced surgeons.

13.30 - 13.50 PRK, LASIK and Smile
Professor Dan Reinstein, Consultant Ophthalmologist, London Vision Clinic

13.50 - 14.10 Corneal Inlays
Mr Mark Wevill, Consultant Ophthalmologist, Optegra Eye Hospital, Birmingham

14.10 - 14.30 Refractive Cataract Surgery
Mr Brian Little, Consultant Ophthalmologist, Moorfields Eye Hospital, London

14.30 - 14.50 Phakic Intraocular lenses
Mr Vincenzo Maurino, Consultant Ophthalmologist, Moorfields Eye Hospital, London

14.50 - 15.00 Panel Discussion

13.30 - 15.00 GLAUCOMA AND OCULAR SURFACE DISEASE Hall 1a
Chair: Mr Mohit Gupta, Consultant Ophthalmologist, Pilgrim Hospital, Boston, UK

This session is aimed at all trainees, general ophthalmologists, glaucoma specialists and allied health professionals involved in the management of glaucoma. Presence of pre-existing ocular surface problems can make it difficult to assess and manage glaucoma. In addition the medical and surgical treatment of glaucoma can compound ocular surface problems. Careful, considered assessment is crucial to ensure compliance with treatment. Successful management strategies either prevent or manage the ocular surface disease help to improve clinical outcomes. During the session these issues will be explored to help update all clinicians alike.

13.30 - 13.46 Impact of ocular surface disease on glaucoma
Professor George Spaeth, Esposito Research Professor, Wills Eye Hospital/Jefferson Medical College, USA

13.46 - 14.02 Medical treatment of glaucoma and ocular surface disease
Mr Kinsheng Lim, Consultant Ophthalmologist, St Thomas Hospital London

14.02 - 14.18 Preservative free drops and ocular surface disease
Mr Mohit Gupta, Consultant Ophthalmologist, Pilgrim Hospital, Boston, UK

14.18 - 14.34 Glaucoma surgery and ocular surface disease
Mr Keith Barton, Consultant Ophthalmologist, Moorfields Eye Hospital, London

14.34 - 14.50 Treatment of ocular surface disease
Professor Harminder Dua, Consultant Ophthalmologist, University Hospital Nottingham

14.50 - 15.00 Panel Discussion

13.30 - 1500 INHERITED RETINAL DISEASES AND SYSTEMIC EXPRESSION Hall 11
Chair: Miss Marie Tsaloumas, Consultant Ophthalmologist, Queen Elizabeth Hospital, Birmingham

This session will explore various aspects of inherited retinal diseases and their systemic associations. Ophthalmic manifestations of systemic diseases are not uncommon with inherited and degenerative retinal disorders and the ophthalmologist is often the first port of call for these patients and may find themselves responsible for addressing the systemic issues as well. The speakers have been chosen for their expertise in this field and will undertake to provide a cohesive overview of the topic and how to address multisystem inherited retinal disorders. The symposium is aimed at trainees, consultants and allied professionals interested in acquiring more expertise in this field.

13.30 - 13.45 BBS: A paradigm for multisystem ciliopathies
Mr Alistair Denniston, Consultant Ophthalmologist, Queen Elizabeth Hospital, Birmingham

13.45 - 14.00 **PXE**
Mr Kamron Khan, Consultant Ophthalmologist, St James Hospital, Leeds

14.00 - 14.15 **Sickle Cell Retinopathy**
Miss Susan Downes, Consultant Ophthalmologist, Oxford Eye Hospital

14.15 - 14.30 **Von Hippel Lindau Disease**
Miss Marie Tsaloumas, Consultant Ophthalmologist, Queen Elizabeth Hospital, Birmingham

14.30 - 14.45 **Optical Coherence Tomography in Inherited Retinal Disease**
Mr Pearse Keane, NIHR Clinician Scientist, Moorfields Eye Hospital, London

14.45 - 15.00 **Questions and Discussion**

15.00 - 15.30 **COFFEE & POSTERS** **Exhibition Hall**

15.30 - 16.30 **RAPID FIRE SESSION** **Hall 1a**
Chair: Professor Andrew Dick, Professor of Ophthalmology, University of Bristol

The rapid fire presentations will be allocated six minutes; three minutes for the presentation and three minutes for the discussion.

15.30 - 15.36 **United Kingdom Neovascular Age-Related Macular Degeneration Database: Time to Retreatment after a Pause in Treatment. Outcomes from 92,976 Intravitreal Ranibizumab Injections.**
Krishnappa Madhusudhana, Aaron Lee, Keane Pearse, Usha Chakravarthy, Robert Johnston, Adnan Tufail, Martin McKibbin
UK AMD Database

15.36 - 15.42 **Diagnostic accuracy In vivo confocal microscopy in detecting fungus and acanthamoeba in microbial keratitis**
Jaya Chidambaram, Namperumalsamy Prajna, Srikanthi Palepu, Prajna Lalitha, Scott Hau, Minna Vesaluoma, Matthew Burton
London School of Hygiene and Tropical Medicine

15.42 - 15.48 **The Application of Optical Coherence Tomography Angiography in Diabetic Retinopathy**
Dawn Sim, Pearse Keane, Nicholas Koutramanos, Kulwant Sehmi, Rupesh Agarwal, Adnan Tufail, Catherine Egan
Moorfields Eye Hospital NHS Foundation Trust

15.48 - 15.54 **A review of 145,334 patient episodes lost to follow up**
Alison Davis, Alex Baldwin, Melanie Hingorani, Andy Dwyer, Declan Flanagan
Moorfields Eye Hospital

15.54 - 16.00 **Intractable Diplopia: A British Ophthalmological Surveillance Unit (BOSU) Study**
David Newsham, Anna O'Connor, Richard Harrad
University of Liverpool

16.00 - 16.06 **Retinal detachment (RD) following cataract surgery: a review of 29,468 consecutive cataract operations**
Vasileios Petousis, Ahmed Sallam, Nigel Kirckpatrick, Robert Johnston
Gloucestershire Hospitals NHS Foundation Trust

16.06 - 16.12 **Detection and Exclusion of Retinoblastoma Gene Mosaicism.**
John Ross Ainsworth, Trevor Cole, Simon Ramsden, Jacqueline Allotey, Isabel Colmenero, Stuart Gillies, Carol Hitchcott
Birmingham Children's Hospital

16.12 - 16.18 **Predicting risk of road traffic accidents in drivers with glaucoma**
Andrew Tatham, Erwin Boer, Carolina Gracitelli, Peter Rosen, Linda Zangwill, Robert Weinreb, Felipe Medeiros
University of California San Diego

16.18 - 16.24 **The risk of cystoid macular oedema after complicated cataract surgery**
Charlotte Buscombe, Colin Chu, Quresh Mohamed, Robert Johnston, Ahmed Sallam
Cheltenham General Hospital

16.24 - 16.30 **Intravitreal Aflibercept for the Treatment of Patients With Diabetic Macular Edema: 100-Week Outcomes From the VIVID-DME and VISTA-DME Trials**
Mariacristina Parravano, Monica Varano
Multicentre study

16.30 - 17.30 EDRIDGE GREEN LECTURE 2015 - A view on glaucoma – Are we seeing it clearly? Hall 1a
Professor David Crabb, City University London

Introduction by Ted Garway-Heath, Moorfields Eye Hospital, London

Professor David Crabb, City University London

David Crabb is Professor of Statistics and Vision Research in the School of Health Science at City University London. He gained a B.Ed. in Mathematics from the University of Oxford and then taught the subject in schools in London before becoming a fugitive of the classroom returning to study for an M.Sc. in Statistics at the University of Sheffield in 1991. He then went on to complete a Ph.D. in Statistics and Visual Science at City University in 1996. Following a post-doctoral position at University College London, working under the direction of Professor Fred Fitzke and Professor Roger Hitchings, he took up a lectureship in Statistics in the School of Biomedical Sciences at Nottingham Trent University in 1999 where he maintained his research interests in vision and ophthalmology. In 2005 he returned to City University to teach on the optometry programme and was made Professor in 2010.

Professor Crabb is a fellow of the Royal Statistical Society, Honorary Consultant in Visual Science at Moorfields Eye Hospital and the Director of the Applied Vision Research Centre at City University London. Professor Crabb's research laboratory contains a lively mixture of vision scientists, optometrists, psychologists, mathematicians and computer scientists. This research laboratory focuses on measurement in vision, especially visual fields, imaging and eye movements. The laboratory has attracted an international reputation, specifically in glaucoma research, publishing more than 50 papers since 2010. His research laboratory has also attracted significant funding from industry and charitable organisations like the International Glaucoma Association and Fight for Sight. Professor Crabb has been a principal investigator on a National Institute of Health Research (NIHR) programme investigating aspects of service delivery of glaucoma and he is joint investigator on several other NIHR sponsored projects with Moorfields and other clinical centres.

One of the main themes of Professor Crabb's work is relating the different stages in the process of chronic eye disease to patient's visual disability and everyday life. Other themes include the design of new tests for visual disorders, development of clinical decision support software and using 'big data' extracted from NHS clinics to assess health service delivery of age-related eye disease.

Vote of thanks from Professor Caroline MacEwen, President, The Royal College of Ophthalmologists

17.30 - 19.00 Drinks Reception Exhibition Hall

All delegates, speakers and exhibitors are invited to attend a drinks reception in the Exhibition Hall. This will provide a great opportunity to socialise and network with colleagues and we hope to welcome many of you to mark the opening of Congress. Complimentary drinks and canapés will be served.

Breakfast Meetings

08.00 - 09.00 WORKSHOP FOR PRACTICAL STATISTICS : HELPFUL STATISTICS FOR OPHTHALMOLOGISTS **Hall 4**

Chair: Mr Richard Wormald, Consultant Ophthalmologist, Moorfields Eye Hospital, London

Of interest to anyone who wishes to write research papers and avoid simple statistical errors. The speakers are members of the Ophthalmic Statistics Group, which is a group of statisticians who have come together because of a common desire to help ophthalmic researchers write research papers free of statistical issues. Statistical formulae will be kept to a minimum (unless requested) and relevance to ophthalmology will be highlighted.

08.00 - 0815 One eye or two
Dr Catey Bunce, Principal Statistician, Institute of Ophthalmology, University College London

08.15 - 08.30 Absence of evidence is not evidence of absence
Mr Richard Wormald, Consultant Ophthalmologist, Moorfields Eye Hospital, London

08.30 - 08.45 Clinical trials with baseline and outcome measurements
Dr Chris Rogers, Co-Director, Clinical Trials and Evaluation Unit, University of Bristol

08.45 - 09.00 The perils of dichotomising continuous variables
Dr Gabriela Czanner, Lecturer in ophthalmic statistics, University of Liverpool

08.00 - 09.00 BREAKFAST WITH NIHR - BREAKING DOWN BARRIERS **Hall 3a**

Chair: Mr Faruque Ghanchi, Consultant Ophthalmologist, Bradford Royal Infirmary

Following success of last year's breakfast session; NIHR, RCOphth, industry and ophthalmologists interested in research will once again have a breakfast symposium to update with NIHR activities and support for industry studies. The symposium will have short talks to provide information on research activities supported by NIHR, NIHR's support for industry studies in particular and a view from industry sponsoring research studies in UK.

08.00 - 08.04 Introduction
Mr Faruque Ghanchi, Consultant Ophthalmologist, Bradford Royal Infirmary

08.04 - 08.16 NIHR: Facilitating world class research delivery
Dr Matt Cooper, Life Sciences Development Director, NIHR Clinical Research Network

08.16 - 08.28 NIHR: focus on Ophthalmology industry studies
Dr Sarah Cooper, Operations Manager, NIHR Clinical Research Network

08.28 - 08.40 Research partnership: Industry's view point
Dr Christopher Brittain, Scientific, Global team Roche, Geneva

08.40 - 09.00 Discussion with faculty

08.00 - 09.00 GRAND ROUNDS: GLAUCOMA **Hall 3b**

Chair: Professor David Broadway, Consultant Ophthalmologist & Honorary Professor, Norfolk & Norwich University Hospital

The aim of this session will be to cover the various surgical procedures that can be utilized in the management of patients with glaucoma, the emphasis being on the appropriate role than glaucoma devices may or may not play in the long-term control of intraocular pressure. Glaucoma surgery has a weak, but growing, evidence base and the speakers will cover the advantages and disadvantages of particular surgical options.

08.00 - 08.05 Glaucoma surgery and a brief presentation of a case requiring surgical management… but what?
Professor David Broadway, Consultant Ophthalmologist & Honorary Professor, Norfolk & Norwich University Hospital

08.05 - 08.20 A big tube is best
Mr Kinsheng Lim, Consultant Ophthalmologist, St Thomas Hospital London

08.20 - 08.35 Less tube, less problem
Mr Leon Au, Consultant Ophthalmologist, Manchester Royal Eye Infirmary

08.35 - 08.50 No tube, no problem
Mr Nuwan Niyadurupola, Consultant Ophthalmologist, Norfolk & Norwich University Hospital

08.50 - 09.00 Panel discussion with questions and answers

08.00 - 09.00 GRAND ROUNDS: UVEITIS **Hall 1a**
Chair: Mr Alistair Denniston, Consultant Ophthalmologist, University Hospitals Birmingham

Each panel member will present one or more cases which are either of general interest with a clear take-home message or where there is genuine diagnostic or management uncertainty which the presenter would like collective expert advice on.

Panel:
Professor Anita Agrawal, Professor of Ophthalmology, Vanderbilt Eye Institute, Nashville, USA
Professor Philip Murray, Professor of Ophthalmology, University of Birmingham/Birmingham and Midland Eye Centre
Mr Simon Taylor, Consultant Ophthalmologist, Imperial College London & Royal Surrey County Hospital
Miss Kanchan Bhan, Consultant Ophthalmologist, Manchester Royal Eye Hospital

09.00 - 10.00 OPHTHALMOLOGY RESEARCH – REAL WORLD IMPACT **Hall 3a**
Chair: Mr Faruque Ghanchi, Consultant Ophthalmologist, Bradford Royal Infirmary

This new symposium brings together renowned researchers and senior executives to provide evaluation of impact of research in real world. The session will provide information on how inherently competitive research work can help foster collaborative working to widen the impact of research through building a network. The measures of impact in ophthalmology include blindness and how the recent research has led to change in clinical practice and its impact on vision loss will be discussed. Research leading to innovation and different clinical care pathways and their impact on wider NHS – e.g. transformation through innovation will be discussed. Individual researchers as well the sponsors of research studies perceive return of their investment in various ways. Attendees of the symposium will learn about how such return can be enhanced for all of those involved in research.

09.00 - 09.02 Introduction
Mr Faruque Ghanchi, Consultant Ophthalmologist, Bradford Royal Infirmary

09.02 - 09.15 Ophthalmology specialty group - Building a network
Professor Usha Chakravarthy, Consultant Ophthalmologist, Royal Victoria Hospital, Belfast and Chair Ophthalmology NIHR CRN

09.15 - 09.28 Reducing burden of blindness
Professor Rupert Bourne, Consultant Ophthalmologist, Hinchingbrooke/Addenbrookes/Moorfields Hospitals

09.28 - 09.43 Research: Breeding innovation
Dr Dawn Lawson, COO, Yorkshire & Humber Academic Health Science Network

09.43 - 09.58 Research: Return on investment
Professor Stephen Smye, Director of Research and Innovation, Leeds Teaching Hospitals NHS Trust

09.58 - 10.00 Conclusion and close

09.00 - 10.00 PERI-OCULAR ONCOLOGY **Hall 3b**
Chair: Miss Claire Daniel, Consultant Ophthalmologist, Moorfields Eye Hospital, London

Oncology is a rapidly changing field with many new therapies becoming possible due to advances in translational research. A brief introductory update on the developments on the horizon of peri-ocular oncology including the use of targeted therapy and immune-modulators will be provided by Miss Claire Daniel. Mr Mandeep Sagoo will present an overview of the diagnosis, management and follow up of ocular surface tumours including primary acquired melanosis, conjunctival melanoma and ocular surface squamous neoplasia. Mrs Jenny Geh, Consultant Plastic Surgeon at Guys & St Thomas' will be discussing the use of sentinel node biopsies in tumour staging and management

09.00 - 09.30 Ocular surface tumours - A review of diagnosis in management of conjunctival neoplasia
Mr Mandeep Sagoo, Consultant Ophthalmologist, Moorfields Eye Hospital, London

09.30 - 10.00 Indications for sentinel node biopsy for Melanoma patients - An update on recent papers and a review of the use of sentinel node biopsy for peri ocular melanoma
Mrs Jenny Geh, Consultant Plastic Surgeon, St Thomas' Hospital, London

09.00 - 10.00 NYSTAGMUS - CONGENITAL AND ACQUIRED **Hall 1a**
Chair: Professor Irene Gottlob, Professor of Ophthalmology, Leicester Royal Infirmary

This session is aimed at trainees and consultants. Diagnosing and localising nystagmus is challenging. Recognition of other eye abnormalities, including changes of retinal structures seen on OCT are essential to differentiate infantile nystagmus forms. Careful examination of nystagmus characteristics and associated neurological signs are critical to localise acquired nystagmus. In this session these issues will be explored. Cases of the various nystagmus forms will be presented.

09.00 - 09.15 Differentiating subtypes of infantile nystagmus
Professor Irene Gottlob, Professor of Ophthalmology, Leicester Royal Infirmary

09.15 - 09.30 The something about nystagmus
Mr Mike Burdon, Consultant Ophthalmologist, Queen Elizabeth Hospital, Birmingham

09.30 - 09.45 Localising forms of nystagmus
Professor Andy Lee, Professor of Ophthalmology, Houston Methodist Hospital, USA

09.45 - 10.00 Group discussion

09.00 - 10.00 HOW TO COMMISSION AND PROVIDE TREATMENT Hall 4
Chairs: Ms Parul Desai, Consultant Ophthalmologist, Moorfields Eye Hospital, London and Chair of Vision 2020 (UK) Public Health Committee & Mr Richard Wormald, Consultant Ophthalmologist, Moorfields Eye Hospital, London

With the latest re-organisation of the NHS and in particular commissioning processes and with further uncertainty following the election, the eye health sector needs to come together to agree principles and processes to ensure equitable, efficient and effective eye health care services within the NHS. The Clinical Council for Eye Health Commissioning has taken on this task with representatives from all relevant agencies and Vision 2020 (UK) and the UK Vision strategy are strongly supporting collaboration across the sector to achieve this. The Vision 2020 (UK) Ophthalmic Public Health Committee through a process of contribution and consultation have developed a scheme of process and outcome measures providing a set of metrics for the delivery of services. But in the longer term, health systems and services research is needed to establish a sound evidence base for models of eye care delivery relevant not only to the NHS but to established and emerging health economies around the world. The three speakers will address these three areas to be followed by an actively chaired panel discussion to hear the views of delegates and to answer questions.

09.00 - 09.05 Introduction - Commissioning Services and Vision 2020 (UK)
Mr Richard Wormald, Consultant Ophthalmologist, Moorfields Eye Hospital, London

09.05 - 09.20 The Clinical Commissioning Council: Who it is and what it does
Ms Katrina Venerus, Managing Director of Local Optical Committee Support Unit (LOCSU)

09.20 - 09.35 Indicators and outcome for eye care services
Ms Parul Desai, Consultant Ophthalmologist, Moorfields Eye Hospital, London and Chair of Vision 2020 (UK) Public Health Committee

09.35 - 09.50 Right care, value based medicine and the research agenda for efficient and effective delivery of eye care services
Miss Aeesha Malik, Specialist Trainee with former secondment to Right Care at the Department of Health

09.50 - 10.00 Panel Discussion

09.00 - 10.00 HIGHLIGHTS AND OUTCOMES FROM NATIONAL OPHTHALMOLOGY DATABASE (NOD) AUDITS Hall 12
Chair: Professor John Sparrow, Consultant Ophthalmologist, Bristol Eye Hospital

Electronic working has in recent years allowed extraction and aggregation of large structured multi-centre sets of ophthalmological data. To date, analyses of procedure data for cataract, retinal surgery, glaucoma surgery and AMD treatments have enhanced our understanding of the benefits and risks associated with these interventions. In the era of 'big data' it is increasingly possible to understand not only the detail relevant to individuals and their treatments, but also to understand that detail 'en masse' to facilitate refinements to the ways in which health services are delivered.

09.00 - 09.15 Introduction and Cataract risk update
Professor John Sparrow, Consultant Ophthalmologist, Bristol Eye Hospital

09.15 - 09.25 Retinal surgery outcomes
Mr Tim Jackson, Consultant Ophthalmologist, King's College London

09.25 - 09.35 Glaucoma surgery
Dr John Somner, Specialist Registrar, Addenbrooke's Hospital, Cambridge

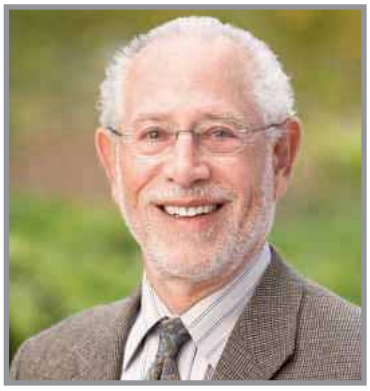
09.35 - 09.45 AMD dataset
Mr Martin McKibbin, Consultant Ophthalmologist, St James's University Hospital, Leeds

09.45 - 09.55 AMD anti-VEGF treatment outcomes
Mr Rob Johnston, Consultant Ophthalmologist, Gloucestershire Royal Hospital

09.55 - 10.00 Questions and discussion

10.00 - 11.00 **THE KEELER LECTURE 2015 - Vision and Eye Disease in Art** **Hall 1a**
Professor Michael F. Marmor M.D., Stanford University School of Medicine, Stanford, California, USA

Introduction by Mr Richard Keeler, Honorary Fellow and College Historian, Royal College of Ophthalmologists



Professor Michael F. Marmor M.D., Stanford University School of Medicine, Stanford, California, USA

Michael F. Marmor, M.D. is Professor and Past Chair of Ophthalmology at the Stanford University School of Medicine. He graduated from Harvard College and Harvard Medical School, and spent 3 years at the National Institute of Health studying basic neurophysiology. His ophthalmology residency was at Massachusetts Eye and Ear Infirmary. After residency he joined the faculty at the University of California, San Francisco for one year, and then moved to Stanford. He has been there since 1974, where he not only works in the School of Medicine, but also teaches undergraduates in the Program in Human Biology and is an Affiliate of the Stanford Center in Biomedical Ethics.

He is a leading scholar in retinal physiology, clinical electrophysiology and diseases of retinal function with a major current interest in the nature and management of hydroxychloroquine retinopathy. He has been primary author in developing international standards for the electroretinogram (ERG) and related tests. In a similar capacity he has been primary author of the American Academy of Ophthalmology recommendations for screening of hydroxychloroquine retinopathy (with a new version in process). He has written extensively about retinitis pigmentosa and related diseases, uses of the ERG and other tests, and about the physiology of the retinal pigment epithelium including mechanisms of retinal attachment and fluid transport.

He is also a leader in exploring the interface of vision and eye disease with the arts history, and has developed techniques for simulating the altered vision of artists with eye disease. He endowed a Marmor Lecture at the annual AAO meeting, to bring cultural diversion into the conference, and is also an organizer of the annual history symposia at that meeting. He is History Editor for Survey of Ophthalmology, and author of their TimeOph column of poetry and diversions. He has written several books, including two editions of The Retinal Pigment Epithelium, and more than 300 papers, not only about retina but also about art, history, music and sports. His most recent book, The Artist's Eyes (2009, with James G. Ravin, M.D.), explores the relationship of vision and eye disease to art.

Vote of thanks from Professor Caroline MacEwen, President, The Royal College of Ophthalmologists

11.00 - 11.30 **COFFEE & POSTERS** **Exhibition Hall**

11.30 - 13.00 **DEVELOPING THERAPIES WITH RETINAL STEM CELLS** **Hall 1c**
Chair: Professor Andrew Lotery, Professor of Ophthalmology, Southampton General Hospital

This seminar will update clinicians on the progress in developing stem cells to treat retinal diseases. Patients often ask "when can I have stem cells for my eyes?" This seminar featuring upcoming and established leaders in the field of retinal stem cell research will highlight the progress that has been made. It will allow clinicians to answer their patients' questions on stem cells in an informed and realistic manner. This symposium is aimed at trainees, consultants and allied professionals interested in learning more about this cutting edge translational science.

11.30 - 11.50 **Developing surgical techniques for retinal cell transplantation**
Mr Philip Alexander, Research Fellow, Southampton General Hospital

11.50 - 12.10 **Endothelial stem cells and ocular revascularization**
Professor Alan Stitt, Director, Centre for Experimental Medicine, Royal Victoria Hospital, Belfast

12-10 - 12.30 **Embryonic stem cells and retinal clinical trials**
Professor James Bainbridge, Consultant Ophthalmologist, Moorfields Eye Hospital, London

12.30 - 12.50 **Induced pluripotent stem cells and retinal regeneration**
Mr David Steel, Consultant Ophthalmologist, Sunderland Eye Infirmary

12.50 - 13.00 **Group Discussion**

11.30 - 13.00 **INTERNATIONAL OPHTHALMOLOGY: EVIDENCE FOR PRACTICE** **Hall 12**
Chair: Mr Matthew Burton, Consultant Ophthalmologist, Moorfields Eye Hospital, London

International Ophthalmology: Evidence for Practice is a session for anyone currently involved with or interested in ophthalmology in low and middle-income settings. There are growing links between UK ophthalmologists / hospitals and units in many parts of the world. An international group of speakers will share findings from recent research, discuss how this is informing practice and reflect on how professionals from the UK can support capacity building for eye health elsewhere.

11.30 - 11.45 Results of a six-year population based cohort on the incidence and progression of eye disease from Kenya
Dr Andrew Bastawrous, Clinical Lecturer and Ophthalmologist, London School of Hygiene and Tropical Medicine

11.45 - 12.00 Surgery for trachomatous trichiasis in Ethiopia: results of a randomised controlled trial of BLTR v PLTR
Dr Esmael Habtamu, Research Fellow, Carter Center Trachoma Control Programme, Ethiopia

12.00 - 12.15 Ocular surface squamous neoplasia in Kenya; results of randomised controlled trial post-operative 5FU
Dr Stephen Gichuhi, Senior Lecturer & Consultant Ophthalmologist, University of Nairobi, Kenya

12.15 - 12.30 Diabetic Retinopathy research and service development in Malawi
Mr Nicholas Beare, Consultant Ophthalmologist, Royal Liverpool University Hospitals

12.30 - 12.45 School vision screening using the Peek smartphone system in Kenya
Dr Hillary Rono, Consultant Ophthalmologist & Research Fellow, University of Eldoret, Kenya and London School of Hygiene & Tropical Medicine

12.45 - 13.00 The Commonwealth Eye Health Consortium: Capacity building for eye health
Mr Matthew Burton, Consultant Ophthalmologist, Moorfields Eye Hospital, London

11.30 - 13.00 INFLAMMATORY EYE DISEASE - THE SPOTTED FUNDUS Hall 3a
Chair: Professor Miles Stanford, Consultant Ophthalmologist, St Thomas' Hospital, London

Diseases giving rise to spots at the back of the eye are somewhat rare with an uncertain prognosis and debate about the most appropriate treatment. In some cases the disease is benign and settles without treatment whilst in others there is a commitment to long-term immunosuppression to preserve vision. In this symposium these disorders will be reviewed with an update on best current imaging and management options.

11.30 - 11.35 Introduction
Professor Miles Stanford, Consultant Ophthalmologist, St Thomas' Hospital, London

11.35 - 11.50 Acute posterior mulitfocal placoid pigment epitheliopathy
Mr Will Tucker, Uveitis Fellow, St Thomas' Hospital, London

11.50 - 12.10 Punctate inner choroidopathy
Mr Adnan Tufail, Consultant Ophthalmologist, Moorfields Eye Hospital, London

12.10 - 12.30 Birdshot choroidopathy
Mr Alastair Denniston, Consultant Ophthalmologist, Queen Elizabeth Hospital, Birmingham

12.30 - 12.45 New insights from imaging
Mr Pearse Keane, NIHR Clinician Scientist, Moorfields Eye Hospital, London

12.45 - 13.00 When spots really matter
Professor Miles Stanford, Consultant Ophthalmologist, St Thomas' Hospital, London

11.30 - 13.00 GLAUCOMA: MEET THE EXPERTS Hall 1b
Chairs: Professor Rupert Bourne, Consultant Ophthalmologist, Hitchingbrooke / Addenbrookes / Moorfields Hospitals & Professor Peter Shah, Consultant Ophthalmologist, University Hospitals Birmingham

Professor Ivan Goldberg, Clinical Associate Professor, University of Sydney, Australia

Professor George Spaeth, Esposito Research Professor, Wills Eye Hospital/Jefferson Medical College, USA

Professor Peter Shah and Professor Rupert Bourne will informally interview Professor George Spaeth and Professor Ivan Goldberg and explore clinical dilemmas, patient safety issues, service developments, innovations in glaucoma and personal reflections.

11.30 - 13.00 MACULAR DEGENERATION: AN UPDATE Hall 1a
Chair: Mr Ian Pearce, Consultant Ophthalmologist, Royal Liverpool University Hospitals

This session is aimed at trainees, general ophthalmologists and retinal specialists. The objective of the session is to update on the key aspects of care facing ophthalmologists on a weekly basis with AMD patients. The benefits and limitations of the varied treatment regimes will be reviewed and the impact of anti-VEGf treatment in large observational studies of UK patients will be analysed to guide future management. The most relevant ongoing studies and the studies to look out for in AMD management in the near future will be highlighted. The common pitfalls of conditions that mimic classical AMD will be addressed and the most appropriate pragmatic approach to patients who present with large sub macular haemorrhage will be reviewed.

11.30 - 11.45 **What is the best AMD treatment regime for 2015?**
Mr Richard Gale, Medical Ophthalmology Consultant, York Hospital

11.45 - 12.00 **What do the recent large population based studies (Medisoft + Luminous) tell us about AMD care?**
Mr Chris Brand, Consultant Ophthalmologist, Royal Hallamshire Hospital, Sheffield

12.00 - 12.15 **What are the major pitfalls in AMD Care?**
Mr Ian Pearce, Consultant Ophthalmologist, Royal Liverpool University Hospitals

12.15 - 12.30 **What studies do I need to look out for?**
Mr Adnan Tufail, Consultant Ophthalmologist, Moorfields Eye Hospital, London

12.30 - 12.45 **What to do with sub macular haemorrhage in AMD?**
Speaker tbc

12.45 - 13.00 **Questions**

13.00 - 14.00 **LUNCH** **Exhibition Hall**

13.00 - 14.00 **SAS FORUM** **Hall 4**
A reception offering the chance for all staff and associate grade ophthalmologists to pose questions and talk to the Honorary Secretary and College officers. Lunch and refreshments will be served.

14.00 - 15.00 **RAPID FIRE SESSION** **Hall 1a**
Chair: Professor Miles Stanford, Consultant Ophthalmologist, St Thomas' Hospital, London

The rapid fire presentations will be allocated six minutes; three minutes for the presentation and three minutes for the discussion.

14.00 - 14.06 **BOSU Survey of Endogenous Endophthalmitis within the British Isles**
Sarah Maling, Nigel Davies
Chelsea and Westminster Hospital

14.06 - 14.12 **Molecular basis and phenotype-genotype correlations in a large UK cohort of Leber Congenital Amaurosis**
Sarah Hull, Robert Henderson, Arun Dev Borman, Philip Moradi, Andrew Webster, Michel Michaelides, Anthony Moore
Moorfields Eye Hospital & Great Ormond Street Hospital

14.12 - 14.18 **Clinical outcomes in the UK for 5075 patients with neovascular age-related macular degeneration (nAMD) treated with ranibizumab for one year: LUMINOUS UK second interim analysis results**
Christopher Brand, Shahrnaz Izadi, Geeta Menon, Shahrnaz Izadi, Sue Lacey
Multicentre study

14.18 - 14.24 **Diabetic Retinopathy Prevention Programmes in Five VISION 2020 LINK Institutions in Sub-Saharan Africa**
Sophie Poore, Marcia Zondervan, Karl Blanchet, Allen Foster
London School of Hygiene and Tropical Medicine

14.24 - 14.30 **The Royal College of Ophthalmologists National Ophthalmology Database Study of Cataract Surgery: Visual Outcomes and Complications.**
Alex Day, Paul Donachie, John Sparrow, Robert Johnston
UCL Institute of Ophthalmology and Moorfields Eye Hospital

14.30 - 14.36 **Are the Driver and Vehicle Licensing Agency (DVLA) recommendations following amaurosis fugax justified? A review of the evidence and NHS consultant ophthalmologist opinion in the UK.**
Paul Steptoe, Jeremy Butcher
Countess of Chester Hospital

14.36 - 14.42 **Evaluation of Visual Gains in Patients With Choroidal Neovascularisation Secondary to Pathological Myopia in the MYRROR Study**
Francesco Bandello
University Vita-Salute

14.42 - 14.48 **Anterior segment optical coherence tomography in pigment dispersion syndrome: a case-control study**
Ameet Shah, Gerassimos Lascaratos, Angelos Sinapis, Dimitrios Sinapis, David Garway-Heath
Moorfields Eye Hospital NHS Foundation Trust

14.48 - 14.54 **Surgical Trabeculectomy Training - Are we safe at supervising?**
Andrew Walkden, Martyn Senior, Samuel Naylor, Hayun Lee, Nitin Anand, Anna Bhargava
Royal Preston Hospital

14.54 - 15.00 **Headache determines Quality of Life in Idiopathic Intracranial Hypertension**
Yasmeen Mulla, Susan Mollan, Keira Markey, Rebecca Woolley, Smitaa Patel, Susan Mollan, Alexandra Sinclair
University of Birmingham

15.00 - 15.30 **AGM** **Hall 1a**
Join the President and College Officers for the 2015 AGM

15.30 - 16.00 **COFFEE & POSTERS** **Exhibition Hall**

16.00 - 17.00 **DUKE ELDER LECTURE 2015 - Learning from Patients** **Hall 1a**
Professor John Sparrow, Bristol Eye Hospital, Bristol, UK

Introduction by Mr Richard Harrad, Consultant Ophthalmologist, Bristol Eye Hospital

Professor John Sparrow, Bristol Eye Hospital, Bristol, UK

John Sparrow trained in London, Oxford and Leicester, taking time out for a DPhil on the lens in diabetes in Oxford. He was appointed in 1992 to a consultant senior lecturer post in Bristol and in 2000 he moved to the NHS as a Consultant Ophthalmologist while retaining honorary academic links as senior lecturer with the University of Bristol and subsequently also the LSHTM. He undertook a part time two year secondment as the connecting for health national clinical lead for ophthalmology, during which time he promoted specialty specific interoperable electronic working and gained approval for the cataract national dataset. In 2012 he was awarded an Honorary Professorship in Ophthalmic Health Services Research and Applied Epidemiology at the University of Bristol in recognition of his contributions to research in ophthalmology.

Working clinically in glaucoma and cataract he has made contributions nationally and internationally. The Bristol RCT of Shared Care has provided underpinning evidence for the development of glaucoma shared care services, now a nationally accepted and widely implemented model of care. He chaired the NICE glaucoma guideline development group and the NICE glaucoma quality standards topic expert group and was elected as the 2014 Chair of UKEGS, hosting a successful meeting in Bristol.

In cataract research he has contributed RCT evidence on the benefits of 2nd eye cataract surgery, clinical quantification of cataract, population requirements for cataract surgery, postoperative endophthalmitis modelling, surgical benchmarks, risk indicators for outcome, and variability, and case complexity adjustment of complication rates for surgeons. He co-founded the College facilitated National Ophthalmology Database (NOD) project which provides audit feedback and benchmarks for a range of clinically important conditions, including cataract, VR surgery, AMD, and diabetic retinopathy. He is the Clinical Lead for the HQIP funded National Ophthalmology Audit which will build on the work of the NOD project. He is currently the Chief Investigator for a major NIHR Programme Grant for Applied research, a highly prestigious clinically initiated five year £2M cataract research award to develop an NHS suitable short form Patient Reported Outcome Measure and use this to predict better and worse self-reported outcomes. It is anticipate self-reported benefit will augment risk models for surgical complications and loss of vision and support decision making for cataract surgery.

John has for many years been an active College member contributing to College activities through the professional standards, scientific, quality standards and IT and audit (currently chair) committees. He has published on all major service areas in ophthalmology, and in addition to cataract and glaucoma he has contributed evidence on laser treatment for diabetic retinopathy, surgical success rates in retinal detachment, age related macular degeneration, childhood vision screening, primary care ophthalmology services and vision related quality of life. He has contributed regularly to College Congresses over the years and has delivered over 150 presentations at national and international meetings. His work has been cited on around 2000 occasions (H-25) with public domain outputs of over 300.

Vote of thanks from Professor Caroline MacEwen, President, The Royal College of Ophthalmologists

17.00 - 18.00 **OPHTHALMIC TRAINEES' FORUM** **Hall 4**
A drinks reception offering the chance for all ophthalmologists in training to pose questions and talk to the President and College Officers

ALLIED PROFESSIONS DAY

09.00 - 17.00 ALLIED PROFESSIONS DAY **Hall 11**

Chairs: Mr Larry Benjamin, Consultant Ophthalmologist, Stoke Mandeville Hospital, Aylesbury & Professor Janet Marsden, Professor of Ophthalmology and Emergency Care, Manchester Metropolitan University

This Allied Professionals day at the Royal College of Ophthalmologists Annual Congress 2015 is designed to be of interest and use to the whole ophthalmic team, combining the very latest thinking about issues in ophthalmology with practical applications for excellence in service delivery.

A clinical theme of glaucoma considers developments in this area, along with some blue sky thinking and very down to earth practice.

Along with renowned experts in their fields, we consider developments in other areas of ophthalmology including issues such as corneal cross linking and corneal surgery.

We hear from colleagues who use their skills in areas quite alien to most of us and consider how links programmes help both ends of the link. Finally, we take a look at ophthalmic education, a huge issue, and look at skills training, a new diploma and apprenticeship scheme for ophthalmic technicians and how education can make huge differences in practice.

Session 1: Update on glaucoma

09.00 - 09.25 Options in glaucoma drainage surgery, present solutions and future possibilities
Dr Anna Mead, Consultant Ophthalmologist, Stoke Mandeville Hospital, Aylesbury

09.25 - 09.45 Selective Laser Trabeculoplasty and the patient with glaucoma
Miss Asifa Shaikh, Consultant Ophthalmologist, Stoke Mandeville Hospital, Aylesbury

09.45 - 10.05 Interpreting visual fields; what the printout means!
Mr Bruce James, Consultant Ophthalmologist, Stoke Mandeville Hospital, Aylesbury

10.05 - 10.35 Group based education for patients with glaucoma can help to deliver the NICE guidance on delivering information to patients with glaucoma
Professor Heather Waterman, Professor of Nursing and Ophthalmology, University of Manchester

10.35 - 11.00 Chinese medicine and glaucoma
Dr Penelope Stanford, Senior Teaching Fellow and Lecturer, University of Manchester

11.00 - 11.30 Coffee break

Session 2: Developments in ophthalmic practice

11.30 - 11.50 Corneal cross linking
Mrs Claire Britten, Corneal Specialist Nurse, Royal Liverpool University Hospitals

11.50 - 12.15 An update on corneal surgery
Mr Martin Leyland, Consultant Ophthalmologist, Royal Berkshire Hospital and Oxford Eye Hospital

12.15 - 12.40 Stereo photography in ophthalmology
Mr Richard Hancock, Clinical Sciences Centre, University Hospital Aintree, Liverpool

12.40 - 13.00 An update on Diabetic Macular Oedema
Miss Marie Tsaloumas, Consultant Ophthalmologist, Queen Elizabeth Hospital, Birmingham

13.00 - 14.00 Lunch

Session 3: Ophthalmic Education

14.00 - 14.20 Diploma and apprenticeships in Ophthalmic and Visual Science
Miss Rosalind Harrison, Chair of Association of Health Professions in Ophthalmology (AHPO)

14.20 - 14.45 Educating to make a difference
Mrs Jane Tapley, Head Orthoptist, Royal Berkshire Hospital

14.45 - 15.10 Cognitive skills training
Mr Brian Little, Consultant Ophthalmologist, Moorfields Eye Hospital, London

15.10 - 15.30 Advanced practitioner education and the temporal artery
Mr John Cooper, Oculoplastic Specialist Nurse, Manchester Royal Eye Hospital

15.30 - 16.00 Coffee Break

16.00 - 16.20 Vision 2020 links programme; The Moorfields experience
Miss Helen Gibbons, Clinical Lead Nurse, Moorfields Eye Hospital, London

16.20 - 16.40 Vision 2020 links programme; The Welsh experience
Miss Helen Juckes, Ophthalmology Matron, Abergele Hospital, Conwy & Miss Lorraine White, Ophthalmology Sister, Abergele Hospital, Conwy

16.40 - 17.00 Working with Orbis; Hospital based programmes
Mr Larry Benjamin, Consultant Ophthalmologist, Stoke Mandeville Hospital, Aylesbury

BREAKFAST MEETINGS

08.00 - 09.00 INNOVATIONS IN OPHTHALMIC EDUCATION **Room 3a**
Chair: Mr George Saleh, Consultant Ophthalmologist, Moorfields Eye Hospital, London

This session will be of interest to both trainees and trainers as the four speakers, Mr George Saleh (Chair), Mr Paul Sullivan, Mr John Ferris and Mr Larry Benjamin share their experience and thoughts regarding some of the latest ophthalmic training innovations. Educational technology and techniques have advanced rapidly in recent years with the introduction of web based resources, high and low fidelity simulation along with e-technologies. This symposium will highlight pertinent developments, how they have been successfully applied so far, where tools can be accessed and detail some of the most recent work the Royal College is undertaking to integrate this into ophthalmic training.

08.00 - 08.15 Challenging the myths about simulated ocular surgery
Mr John Ferris, Consultant Ophthalmologist, Cheltenham General Hospital

08.15 - 08.30 The technical simulation programme and the Human Factor Pilots
Mr George Saleh, Consultant Ophthalmologist, Moorfields Eye Hospital, London

08.30 - 08.45 New technologies in e-learning
Mr Paul Sullivan, Consultant Ophthalmologist, Moorfields Eye Hospital, London

08.45 - 09.00 The future of simulation in ophthalmic surgical training
Mr Larry Benjamin, Consultant Ophthalmologist, Stoke Mandeville Hospital, Aylesbury

08.00 - 09.00 NEWLY APPOINTED CONSULTANTS **Hall 4**
Chairs: Professor Peter Shah, Consultant Ophthalmologist, University Hospitals Birmingham & Mr Mike Burdon, Consultant Ophthalmologist, Queen Elizabeth Hospital, Birmingham

This short one hour interactive seminar aims to give newly appointed Consultants an insight into the challenges they face in their initial years. The seminar will aid new Consultants in developing a personal "Survival Strategy" to help them navigate the modern NHS.

08.00 - 08.20 Avoiding isolation
Professor Peter Shah, Consultant Ophthalmologist, University Hospitals Birmingham

08.20 - 08.40 Dealing with complaints
Mr Mike Burdon, Consultant Ophthalmologist, Queen Elizabeth Hospital, Birmingham

08.40 - 09.00 Are you at risk of burn-out?
Dr Freda Sii, Senior Glaucoma Fellow, University Hospitals Birmingham

08.00 - 09.00 GRAND ROUNDS: OCULOPLASTICS **Hall 1a**
Chair: Mr Ben Parkin, Consultant Ophthalmologist, Royal Bournemouth Hospital

This session will comprise a series of 5 – 6 interesting short cases spanning the breadth of oculoplastic lacrimal and orbital surgery. Each case will be presented and discussed by a panel of experts.

Mr Ben Parkin, Consultant Ophthalmologist, Royal Bournemouth Hospital
Mr Daniel Ezra, Consultant Ophthalmologist, Moorfields Eye Hospital, London
Mr Tony Tyers, Consultant Ophthalmologist, Salisbury District Hospital
Mr Paul Cauchi, Consultant Ophthalmologist, Tennent Institute of Ophthalmology, Glasgow

08.00 - 09.00 SPECIALISED COMMISSIONING AND OPHTHALMOLOGY **Hall 1c**
Chair: Miss Alison Davis, Clinical Director, Moorfields Eye Hospital, London

Specialised commissioning covers the service directly commissioned by NHS England as part of the reforms put into place by the Health and Social Care Act which came into force on the 1st of April 2013. The aim of the symposium is to provide a context to specialised commissioning and an update as to the current position. Specialised ophthalmology is commissioned within networks. All the speakers are actively involved in specialised commissioning. The symposium will be of particular relevance to clinical leads as well as those who provide specialised services.

08.00 - 08.05 The patient perspective
Ms Rea Mattocks, PPE representative, Specialised ophthalmology CRG

08.05 - 08.15 Background to specialised commissioning
Mr Iain Mellis, Accountable Commissioner for Specialised Ophthalmology, NHS England

08.15 - 08.30 Policy development specialised commissioning
Professor Andrew Dick, Professor of Ophthalmology, University of Bristol | Mr Richard Lee, Consultant Senior Lecturer in Ophthalmology, University of Bristol | Mr Clive Edelsten, Consultant Ophthalmologist, Ipswich Hospital

08.30 - 08.40 Commissioning for specialised ophthalmology, where are we now?
Miss Alison Davis, Clinical Director, Moorfields Eye Hospital, London

08.40 - 09.00 Questions and Discussion

08.00 - 09.00 PENSIONS AND INVESTMENTS Hall 1b
Chair: Mr Peter McDonnell, Birmingham and Midland Eye Centre

This session will be chaired by Mr Peter McDonnell, Honorary Treasurer of the Royal College of Ophthalmologists. The NHS pension scheme changes yet again in April 2015 and there will be significant consequences for all doctors working in the NHS. At the same time the Chancellor in his Autumn Statement in 2014 has outlined some of the most far reaching reforms of the tax treatment of private pensions in a generation. Our two speakers are experts in the areas of pensions and taxation and this session aims to give an update on the various sections of the NHS pension scheme, and provide a review of such topics as Tax issues relating to pensions and investments including Annual and Lifetime Allowances for pension contributions, Individual Savings Accounts (ISAs), Self Invested Personal Pensions (SIPPs), and Stakeholder pensions from the individual doctor's perspective particularly in the light of the forthcoming taxation changes for private pensions.

08.00 - 08.25 Pensions from the doctors perspective
Mr Andy Blake, BMA Pensions Department

08.25 - 08.50 Investments and Private Pensions
Ms Jacquie Adams, Beever and Struthers Chartered Accountants

08.50 - 09.00 Discussion

09.00 - 10.30 GIANT CELL ARTERITIS Hall 1a
Chair: Miss Susan Mollan, Birmingham and Midland Eye Centre

Suspected Giant Cell Arteritis is a major area of clinical risk, due to a combination of the seriousness of the condition, the associated morbidity of its treatment and challenges in its diagnosis. Temporal artery biopsy is specific, but invasive and may not sample the affected area. This session is aimed at all ophthalmologists. Professor Andy Lee (Houston), will energize the session on the ophthalmic presentation of GCA. Associate Professor Sarah Mackie (Leeds) will give some insight to the rheumatological presentation. Professor Ann Morgan (Leeds) will outline the work of the UK GCA consortium and the impact of genetic and social deprivation in GCA with attention to the Genomewide Association Study and the International Immunochip Study. In breaking news from the TABUL study Professor Raashid Luqmani (Oxford) will highlight the key points from the RCT investigating temporal artery biopsy versus ultrasound. To close the session, Dr Alex Sinclair (Birmingham) will help work out what to do when GCA has been ruled out, but the patient still has headache.

09.00 - 09.20 The ophthalmic presentation of GCA not to miss
Professor Andy Lee, Professor of Ophthalmology, Houston Methodist Hospital, USA

09.20 - 09.30 Cases to illustrate the rheumatology presentation of GCA
Dr Sarah Mackie, Associate Clinical Professor, Leeds Institute of Rheumatic and Musculoskeletal Medicine

09.30 - 09.50 Understanding the implications of Genetics and Social deprivation research in GCA
Professor Ann Morgan, Professor of Molecular Rheumatology and Honorary Consultant Rheumatologist, Leeds Institute of Rheumatic and Musculoskeletal Medicine

09.50 - 10.10 Breaking news from the TABUL Study
Professor Raashid Luqmani, Professor of Rheumatology, Nuffield Department of Orthopaedics, Oxford

10.10 - 10.20 "It's not GCA...but the patient still has headache"
Dr Alex Sinclair, Consultant Neurologist, University of Birmingham

10.20 - 10.30 Questions and panel discussion

09.00 - 10.30 ADVANCES IN VR Hall 1b
Chair: Professor Robert MacLaren, Consultant Ophthalmologist, University of Oxford

Professor Robert MacLaren will start the session with an update on retinal gene therapy. Mr CK Patel will discuss new developments in paediatric VR surgery followed by a talk on the electronic retinal implant by Mr Tim Jackson. The session will be concluded by Professor David Charteris discussing new developments in PVR surgery and Mr David Steel lecturing on advances in microincision VR surgery. This session will be of interest to trainees, consultants and anyone working within the vitreoretinal sub-specialty.

09.00 - 09.15 **An update on retinal gene therapy**
Professor Robert MacLaren, Consultant Ophthalmologist, University of Oxford

09.15 - 09.30 **New developments in paediatric VR surgery**
Mr CK Patel, Consultant Ophthalmologist, Oxford Eye Hospital

09.30 - 09.45 **The electronic retinal implant**
Mr Tim Jackson, Consultant Ophthalmologist, King's College London

09.45 - 10.00 **New developments in PVR surgery**
Professor David Charteris, Consultant Ophthalmologist, Moorfields Eye Hospital, London

10.00 - 10.15 **Advances in microincision VR surgery**
Mr David Steel, Consultant Ophthalmologist, Sunderland Eye Infirmary

10.15 - 10.30 **Discussion and Questions**

09.00 - 10.30 **WET AND DRY: PLASTICS AND SURFACE** **Hall 1c**
Chairs: Mr Bernie Chang, Consultant Ophthalmologist, St James's University Hospital & Mr Sai Kolli, Consultant Ophthalmologist, University Hospitals Birmingham NHS Foundation Trust

Dry eye disease (DED) is one of the most common ophthalmic conditions and represents a significant burden in most eye clinics. The aim of this session is to provide a thorough understanding of this disease, which is critical to allow effective management of this growing population group. Professor Christine Purslow will start the session with a discussion of the current understanding of the pathophysiology of DED. Professor James Wolffsohn will then discuss the assessment of DED, to include the essential tests required for baseline evaluation as well as more sophisticated testing for specialists and researchers. Mr Teifi James will conclude the session by providing an effective evidence-based and practical DED treatment strategy for the general and specialist ophthalmologist.

While tearing patients may have similar complaints, the aetiology of their symptoms may vary widely and thus require a meticulous evaluation. A thorough history followed by systematic examination of the lids, ocular surface, anterior segment, and lacrimal system will lead the clinician to the proper diagnosis. This short lecture series will focus on modern day investigation and management of epiphora caused by disorders of the lacrimal apparatus. Treatment options for lacrimal obstruction are varied and as surgical techniques continue to evolve, new studies are indicated to determine the approaches that provide the most successful outcomes while ensuring patient safety.

09.00 - 09.05 **Introduction**
Mr Sai Kolli, Consultant Ophthalmologist, University Hospitals Birmingham NHS Foundation Trust

09.05 - 09.20 **Pathogenesis of Dry Eye Disease**
Professor Christine Purslow, Head of Medical Affairs at Spectrum Thea

09.20 - 09.35 **Assessment of Dry Eye Disease**
Professor James Wolffsohn, Deputy Executive Dean, School of Life and Health Sciences, Aston University

09.35 - 09.50 **Treatment strategies for Dry Eye Disease**
Mr Teifion James, Consultant Ophthalmologist, Calderdale Royal Hospital, Halifax

09.50 - 10.00 **Assessment of Wet Eyes/Epiphora**
Mr George Kalantzis, Consultant Oculoplastics, Lacrimal and Orbital Surgeon, St James's University Hospital, Leeds

10.00 - 10.10 **Investigation of Wet Eyes**
Mr Nabil El-Hindy, Consultant Oculoplastics, Lacrimal and Orbital Surgeon, York District Hospital

10.10 - 10.30 **Management of Wet Eyes**
Mr Nabil El-Hindy and Mr George Kalantzis

09.00 - 10.30 **DIABETIC MACULAR OEDEMA** **Hall 3a**
Chair: Professor Victor Chong, Consultant Ophthalmologist, Oxford Eye Hospital

Diabetic macular oedema is the leading cause of visual loss in patients with diabetic retinopathy. Conventional laser was the only treatment option for many years, with the advances of new laser technology, injectable steroids, anti-VEGF agents, and vitreoretinal surgery, there are more treatment options than ever before. In this symposium, we would cover the basic pathophysiology of the condition, followed by a short summary of each of the new technology. The symposium will finish by a discussion among a panel of experts, in using practical cases to illustrate the option of using these new technology in isolation and in combination.

09.00 - 09.12 **Pathophysiology of diabetic macular oedema**
Mr Winfried Amoaku, Consultant Ophthalmologist, University Hospital Nottingham

09.12 - 09.24 **Role of laser in diabetic macular oedema**
Professor Victor Chong, Consultant Ophthalmologist, Oxford Eye Hospital

09.24 - 09.36 Role of Anti-VEGF in diabetic macular oedema
Miss Emily Fletcher, Consultant Ophthalmologist, Gloucestershire Royal Hospital

09.36 - 09.48 Role of steroid in diabetic macular oedema
Miss Sobha Sivaprasad, Consultant Ophthalmologist, Moorfields Eye Hospital, London

09.48 - 10.00 Role of surgery in diabetic macular oedema
Mr Ian Pearce, Consultant Ophthalmologist, Royal Liverpool & Broadgreen University Hospital

10.00 - 10.30 Panel discussion and questions with cases

09.00 - 10.45 DISC AND RETINAL IMAGING IN GLAUCOMA DIAGNOSIS & MONITORING COURSE (PAID COURSE) Hall 12
Chairs: Professor Rupert Bourne, Consultant Ophthalmologist, Hinchingbrooke/Addenbrookes/Moorfields Hospitals & Professor Stephen Vernon, Consultant Ophthalmologist, University Hospital Nottingham

Part 1: This symposium will allow delegates to increase their knowledge in the interpretation of the results obtained with the presented imaging techniques, and also provide an opportunity to improve their scanning skills. Additionally the symposium will provide guidance on which devices to use and when, when to repeat imaging, and how to organise one's glaucoma imaging service which may involve non-ophthalmologist personnel.

09.00 - 09.05 Introduction to imaging in glaucoma diagnosis and monitoring
Professor Rupert Bourne, Consultant Ophthalmologist, Hinchingbrooke/Addenbrookes/Moorfields Hospitals & Professor Stephen Vernon, Consultant Ophthalmologist, University Hospital Nottingham

09.05 - 09.35 Anterior segment imaging
Professor Rupert Bourne, Consultant Ophthalmologist, Hinchingbrooke/Addenbrookes/Moorfields Hospitals

09.35 - 10.05 OCT and HRT of the optic disc and nerve fibre layer: Glaucoma diagnosis
Mr Nick Strouthidis, Consultant Ophthalmologist, Moorfields Eye Hospital, London

10.05 - 10.35 OCT and HRT of the optic disc and nerve fibre layer: Glaucoma monitoring
Professor Stephen Vernon, Consultant Ophthalmologist, University Hospital Nottingham

10.35 - 10.45 Questions and Answers

14.15 - 16.00 Case discussions and demonstrations

Part 2: A series of educational cases involving glaucoma suspects and cases will be available to be worked through by the delegates with the session presenters and representatives of industry. Delegates will be allocated into groups and the presenters will rotate between the groups to achieve one-to-one interaction.
By the end of the symposium the delegates should not only have increased their knowledge in the interpretation of the results obtained with the presented imaging techniques but also be able to image patients themselves. Additionally the symposium will provide guidance on which devices to use and when, when to repeat imaging, and how to organise one's glaucoma imaging service which may involve non-ophthalmologist personnel.

09.00 - 12.00 TRAINING THE TRAINERS - MANAGING DOCTORS IN DIFFICULTY (RESTRICTED SESSION) Hall 4
Chair: Miss Melanie Corbett, Western Eye Hospital, London

This course will help Trainers develop skills to manage trainees in or heading for difficulty. It will show how existing tools can be adapted to help, and give practice in the use of appropriate conversation techniques to achieve positive outcomes for training.

It is suitable for doctors of ST7 and above, but priority will be given to those in training roles (e.g. Clinical and Educational Supervisors, College Tutors, TPDs, RAs HoSs). The course is free to Congress Delegates, but prior registration for the course is essential so delegates can complete the preparatory work.

It uses a blend of independent preparatory learning with intensively-facilitated practical sessions on the day. Pre-recorded lectures and preparatory work (taking about 4 hours) will be circulated beforehand to support the small-group work.

Faculty:
Dr Poorna Abeysiri, Consultant Ophthalmologist, Moorfields Eye Hospital, London
Mr Larry Benjamin, Consultant Ophthalmologist, Stoke Mandeville Hospital, Aylesbury
Mr Mike Hayward, Consultant Ophthalmologist, York District Hospital
Miss Rajni Jain, Consultant Ophthalmologist, Western Eye Hospital, London
Professor Sue Lightman, Consultant Ophthalmologist, Moorfields Eye Hospital, London
Mrs Sarah Maling, Consultant Ophthalmologist, Stoke Mandeville Hospital, Aylesbury
Mrs Cordelia McKechnie, Consultant Ophthalmologist, Whipps Cross Hospital, London
Mr Michael Nelson, Consultant Ophthalmologist, Royal Hallamshire Hospital, Sheffield
Miss Fiona Spencer, Consultant Ophthalmologist, Manchester Royal Eye Hospital
Mr Peter Tiffin, Consultant Ophthalmologist, Sunderland Eye Infirmary

10.30 - 11.00 COFFEE & POSTERS Exhibition Hall

11.00 - 12.00 THE GREAT DEBATE Hall 1a

Chair: Mr Brian Little, Consultant Ophthalmologist, Moorfields Eye Hospital, London

For:

Multifocal IOLs offer no significant advantages over Monovision for Presbyopia Correction with Cataract Surgery

Mr Bruce Allan, Consultant Ophthalmic Surgeon, Moorfields Eye Hospital, London

Against:

Multifocal IOLs offer no significant advantages over Monovision for Presbyopia Correction with Cataract Surgery

Mr Milind Pande, Consultant Ophthalmic Surgeon, Vision Surgery and Research Centre, East Yorkshire

12.00 - 12.15 Awards Ceremony Hall 1a

12.15 - 13.15 THE OPTIC UK LECTURE 2015 Hall 1a

Structure – Functional Relationships in Macular Dystrophies

Professor Anita Agarwal, Professor of Ophthalmology, Vanderbilt Eye Institute, Vanderbilt University School of Medicine, Nashville, USA

Introduction by Professor Usha Chakravathy, Consultant Ophthalmologist, Royal Victoria Hospital, Belfast

Professor Anita Agarwal M.D., Vanderbilt Eye Institute, Nashville, Texas, USA

Dr. Anita Agarwal is a professor of ophthalmology at the Vanderbilt Eye Institute. Dr. Agarwal specializes in medical and surgical diseases of the retina and uvea and has a special interest in uncommon and inherited retinal diseases. She received ophthalmology residency training at the Postgraduate Institute in Chandigarh, India under the mentorship of Dr. Amod Gupta, and at the University of Florida, Gainesville. This was followed by a medical retina fellowship at Vanderbilt University under Dr. J. Donald M. Gass and a vitreoretinal surgical fellowship at West Virginia University under the mentorship of Dr. Lionel Chisholm. She returned to Vanderbilt University as an assistant professor in 1999. There, she worked alongside Dr. Gass, an opportunity that further enhanced their interaction and thereby her learning, ultimately taking over his clinical practice.

She is the author of the Fifth Edition of the Gass' Atlas of Macular Disease, and has co-authored landmark research papers on the genetics of macular degeneration. Her clinical interests include a variety of infectious, inflammatory, degenerative and dystrophic medical retinal disorders. Her research in genetics of AMD is supported by a NEI grant titled 'Unifying Genetics Epidemiology of Macular Degeneration', continuously funded since 2000. She is a member of the Macula Society and Retina Society and has been recognized as one of America's best doctors, Castle Connolly's top doctors and top ophthalmologists. She is the recipient of the 2014 J. Donald M. Gass Medal for outstanding contributions in understanding Macular diseases awarded by the Macula Society. She has also received honor awards from the American Academy of Ophthalmology and the American Society of Retina Specialists. She serves on the editorial board of journals - Ophthalmology and Retina Cases and Brief Reports.

Vote of thanks from Professor Caroline MacEwen, President, The Royal College of Ophthalmologists

13.15 - 14.15 LUNCH Exhibition Hall

14.15 - 16.00 GRAND ROUNDS: NEURO-OPHTHALMOLOGY Hall 1a

Chairs: Miss Margaret Dayan, Consultant Ophthalmologist, Royal Victoria Infirmary, Newcastle upon Tyne & Dr Gordon Plant, Consultant Neurologist, St Thomas' Hospital, London

This session is of interest to trainees, consultants and anyone who may come across neuro-ophthalmology cases in their clinical practice. These cases are often challenging to diagnose and manage and even the most common of disorders can present in unusual ways.

During this session, a range of neuro-ophthalmology cases will be presented to the expert panel to demonstrate how to work through their diagnosis and management and to discuss learning points.

Faculty:
Miss Margaret Dayan, Consultant Ophthalmologist, Royal Victoria Infirmary, Newcastle upon Tyne
Dr Gordon Plant, Consultant Neurologist, St Thomas' Hospital, London
Mr Mike Burdon, Consultant Ophthalmologist, Queen Elizabeth Hospital, Birmingham
Professor Andy Lee, Professor of Ophthalmology, Houston Methodist Hospital, USA

Speakers:
Dr Martyn Bracewell, Senior Lecturer in Neurology, Bangor University and Walton Centre NHS Foundation Trust
Miss Jayne Best, Consultant Ophthalmologist, Royal Victoria Hospital, Belfast
Dr Will Innes, Consultant Ophthalmologist, Royal Victoria Infirmary, Newcastle upon Tyne
Ms Katherine Smyth, Consultant Ophthalmologist, Royal Bolton Hospital
Mr James Benzimra, Strabismus Fellow, Moorfields Eye Hospital, London

14.15 - 16.00 GRAND ROUNDS: FFA/MEDICAL RETINA **Hall 3a**

Chairs: Professor Anita Agarwal, Vanderbilt Eye Institute, Nashville, USA and Editor Gass Atlas of Macular Disease, Professor Alan Bird, Moorfields Eye Hospital, London & Mr Adnan Tufail, Moorfields Eye Hospital, London

Eight retina/uveitis cases will be presented to challenge, educate and entertain the panel and the audience.

Mid-retinal hypoxia
Dr David Mansfield, Consultant Ophthalmologist, Invercylde Royal Hospital

A Ripping Case
Dr Hetvi Bhatt, Foundation Year Doctor, Royal Wolverhampton Hospitals

Fire Sale
Mr Will Tucker, Uveitis Fellow, King's College Hospital, London

Simply CSR
Mr Omar Mahroo, Medical Retina Fellow, Moorfields Eye Hospital, London

Drusen or Serous PEDs
Dr Jose Maya, Foundation Year Doctor, Royal Wolverhampton Hospitals

Eye might know why you have lost weight
Dr Greg Heath, Medical Ophthalmologist, Leeds Teaching Hospital

Untitled case
Dr Paolo Ferrante, Associate Specialist, Moorfields Eye Hospital, London

Myopic retinal complications
Mrs Amy Stone, Consultant Ophthalmologist, Manchester Royal Eye Hospital

14.15 - 16.00 EMERGENCY EYE CARE **Hall 1c**

Chairs: Mr Andrew Jacks, Consultant Neuro-Ophthalmologist, Queen Elizabeth Hospital, Birmingham & Mr Tim Matthews, Consultant Neuro-Ophthalmologist, Queen Elizabeth Hospital, Birmingham

Emergency ophthalmology is a difficult area with many challenges. This symposium will look at key areas of emergency ophthalmology and present diagnostic and treatment plans that will be of help in this busy setting. Two speakers are to address the difficult issue of the electronic patient record and its role in emergency ophthalmology.

14.15 - 14.35 Neuro-ophthalmology emergencies
Mr Tim Matthews, Consultant Ophthalmologist, Queen Elizabeth Hospital, Birmingham

14.35 - 14.55 Glaucoma emergencies
Miss Fiona Spencer, Consultant Ophthalmologist, Manchester Royal Eye Hospital

14.55 - 15.15 Electronic patient record in the emergency department
Mr Kim Son Lett, Consultant Ophthalmologist, Birmingham and Midland Eye Centre
Second speaker tbc

15.15 - 15.35 Corneal emergencies
Professor Christopher Liu, Consultant Ophthalmologist, Sussex Eye Hospital, Brighton

15.35 - 15.55 Retinal emergencies
Mr Paul Sullivan, Consultant Ophthalmologist, Moorfields Eye Hospital, London

15.55 - 16.00 Questions and Discussion

14.15 - 16.00 WHAT MAKES A GREAT CATARACT SURGEON? Hall 1b
Chair: Mr Larry Benjamin, Consultant Ophthalmologist, Stoke Mandeville Hospital, Aylesbury

Cataract surgery is the most common NHS operative procedure. It remains an exciting and challenging operation which, when it goes well, can give spectacular results. Complications, which can arise in any one of the 350,000 cases performed annually, can be just as life changing for the patient. Being a great cataract surgeon means not only being able to perform such surgery in a dextrous and efficient manner but also involves an attitude of mind which allows good communication with the patient and the team involved in that patient's care, flexibility of technique to enable competent complications prevention and management and an ability to learn continuously to keep current and safe. In addition, such a surgeon must be able to pass on these skills using modern teaching methodology. Putting all of this together may take a number of years and these talks will touch upon a number of important areas of modern cataract practice to enable the attendees to update their knowledge on the subjects many facets.

14.15 - 14.50 Risk analysis and self audit - improving outcomes (5 mins for Questions)
Professor John Sparrow, Consultant Ophthalmologist, Bristol Eye Hospital

14.50 - 15.25 Cognitive skills and cognitive skills training (5 mins for Questions)
Mr Brian Little, Consultant Ophthalmologist, Moorfields Eye Hospital, London

15.25 - 16.00 Teaching and learning cataract surgery - shortening the learning curve and maintaining excellence (5 mins for Questions)
Mr Larry Benjamin, Consultant Ophthalmologist, Stoke Mandeville Hospital, Aylesbury

GP Day

09.00 - 16.00 GP DAY Hall 11
Chairs: Miss Seema Verma, Consultant Ophthalmologist, Moorfields Eye Hospital, London and The Royal College of Ophthalmologists & Dr Michael van Dessel, The Royal College of General Practitioners.

This one day meeting will be run by the RCOphth and the RCGP Mersey Faculty and is a unique opportunity to update your ophthalmology skills and knowledge.

09.15 - 09.20 Welcome and Introduction

09.20 - 09.45 Examination of the eye in General Practice: key points
Mr John Ferris, Consultant Ophthalmologist, Gloucester Royal Infirmary

09.45 - 10.10 The acute red eye
Miss Seema Verma, Consultant Ophthalmologist, Moorfields Eye Hospital, London

10.10 - 10.35 Common eye problems in children
Mr Bob Taylor, Consultant Ophthalmologist, York Hospital

10.35 - 11.05 Coffee break

11.05 - 11.30 The tear film: How to manage dry eyes and watery eyes
Mrs Sabrina Shah-Desai, Queen's Hospital, Romford

11.30 - 11.55 Acute visual loss
Miss Susan Mollan, Consultant Ophthalmologist, University Hospital Birmingham

11.55 - 12.20 Diabetes and the eye
Miss Sobha Sivaprasad, Consultant Ophthalmologist, Moorfields Eye Hospital

12.20 - 12.45 Age related macular degeneration: when to refer?
Mr James Talks, Consultant Ophthalmologist, Royal Victoria Infirmary, Newcastle upon Tyne

12.45 - 13.10 Common eye lid problems
Mr Richard Harrad, Consultant Ophthalmologist, Bristol Eye Hospital

13.10 - 14.10 Lunch

14.10 - 14.55 Troubleshooting the ophthalmic referral; the General Practitioner perspective
Dr Michael van Dessel, The Royal College of General Practitioners, Mersey Faculty

14.55 - 16.00 Case discussion and Question & Answer session

RAPID FIRE

1. United Kingdom Neovascular Age-Related Macular Degeneration Database: Time to Retreatment after a Pause in Treatment. Outcomes from 92,976 Intravitreal Ranibizumab Injections
Krishnappa Madhusudhana
UK AMD Database

2. Diagnostic accuracy In vivo confocal microscopy in detecting fungus and acanthamoeba in microbial keratitis
Jaya Chidambaram, Namperumalsamy Prajna, Srikanthi Palepu, Prajna Lalitha, Scott Hau, Minna Vesaluoma, Matthew Burton
London School of Hygiene and Tropical Medicine

3. The Application of Optical Coherence Tomography Angiography in Diabetic Retinopathy
Dawn Sim, Pearse Keane, Nicholas Koutramanos, Kulwant Sehmi, Rupesh Agarwal, Adnan Tufail, Catherine Egan
Moorfields Eye Hospital NHS Foundation Trust

4. A review of 145,334 patient episodes lost to follow up
Alison Davis, Alex Baldwin, Melanie Hingorani, Andy Dwyer, Declan Flanagan
Moorfields Eye Hospital

5. Intractable Diplopia: A British Ophthalmological Surveillance Unit (BOSU) Study
David Newsham, Anna O'Connor, Richard Harrad
University of Liverpool

6. Retinal detachment (RD) following cataract surgery: a review of 29,468 consecutive cataract operations
Vasileios Petousis, Ahmed Sallam, Nigel Kirkpatrick, Robert Johnston,
Gloucestershire Hospitals NHS Foundation Trust

7. Detection and Exclusion of Retinoblastoma Gene Mosaicism
John Ross Ainsworth, Trevor Cole, Simon Ramsden, Jacqueline Allotey, Isabel Colmenero, Stuart Gillies, Carol Hitchcott
Birmingham Children's Hospital

8. Predicting risk of road traffic accidents in drivers with glaucoma
Andrew Tatham, Erwin Boer, Carolina Gracitelli, Peter Rosen, Linda Zangwill, Robert Weinreb, Felipe Medeiros
Princess Alexandra Eye Pavilion

9. The risk of cystoid macular oedema after complicated cataract surgery
Charlotte Buscombe, Colin Chu, Quresh Mohamed, Robert Johnston, Ahmed Sallam
Cheltenham General Hospital

10. Surgical and visual outcomes of retinal detachment surgery in eyes with chorio retinal Coloboma
Sarah Zafar, Naveed Ahmad Qureshi, Arif Hayat Khan Pathan, Nadeem Qureshi
Al Shifa Trust Eye Hospital

11. BOSU Survey of Endogenous Endophthalmitis within the British Isles
Sarah Maling, Nigel Daves
Stoke Mandeville Hospital

12. Molecular basis and phenotype-genotype correlations in a large UK cohort of Leber Congenital Amaurosis
Sarah Hull, Robert Henderson, Arun Dev Borman, Philip Moradi, Andrew Webster, Michel Michaelides, Anthony Moore
Moorfields Eye Hospital & Great Ormond Street Hospital

13. Clinical outcomes in the UK for 5075 patients with neovascular age-related macular degeneration (nAMD) treated with ranibizumab for one year: LUMINOUS UK second interim analysis results.
Christopher Brand, Geeta Menon, Shahrnaz Izadi, Sue Lacey
Total 49 UK sites. Mr Brand's site is the Royal Hallamshire

14. Diabetic Retinopathy Prevention Programmes in Five VISION 2020 LINK Institutions in Sub-Saharan Africa
Sophie Poore, Marcia Zondervan, Karl Blanchet, Allen Foster
London School of Hygiene and Tropical Medicine

15. The Royal College of Ophthalmologists' National Ophthalmology Database Study of Cataract Surgery: Visual Outcomes and Complications.
Alex Day, Paul Donachie, John Sparrow, Robert Johnston
UCL Institute of Ophthalmology and Moorfields Eye Hospital

16. Are the Driver and Vehicle Licensing Agency (DVLA) recommendations following amaurosis fugax justified? A review of the evidence and NHS consultant ophthalmologist opinion in the UK.
Paul Steptoe, Jeremy Butcher
Countess of Chester Hospital

17. Evaluation of Visual Gains in Patients With Choroidal Neovascularisation Secondary to Pathological Myopia in the MYRROR Study
Francesco Bandello
University Vita-Salute

18. Anterior segment optical coherence tomography in pigment dispersion syndrome: a case-control study
Ameet Shah, Gerassimos Lascaratos, Angelos Sinapis, Dimitrios Sinapis, David Garway-Heath
Moorfields Eye Hospital NHS Foundation Trust

19. Surgical Trabeculectomy Training – Are we safe at supervising?
Andrew Walkden, Martyn Senior, Samuel Naylor, Hayun Lee, Nitin Anand, Anna Bhargava
Royal Preston Hospital

20. Headache Determines Quality of Life in Idiopathic Intracranial Hypertension
Yasmeen Mulla, Keira Markey, Rebecca Woolley, Smitaa Patel, Susan Mollan, Alexandra Sinclair
University of Birmingham

AUDIT AND CLINICAL GOVERNANCE

21. An audit measuring the 3 year outcome of ranibizumab for wet AMD in a district general hospital
Adnaan Haq, Prabhu Tonne, Maharatnam Logendra, Gopinath Reddy
Northampton General Hospital

22. Importance of a clinical placement in ophthalmology in the undergraduate medical curriculum
Taras Gout, David Gaunt, Sarah Maling
Watford General Hospital

23. Community optometrist referrals to secondary Urgency Clinic: Appropriateness and accuracy
Matthew Jinkinson, Trevor Warburton, Paul S Cannon
Stepping Hill Hospital

24. Ophthalmology referral and prevalence of detected eye pathology in patients with sarcoidosis attending a secondary care department of respiratory medicine.
Chin Pey Yap
Lincoln County Hospital

25. Venous-Thrombo embolic disease post Ophthalmology Daycase Surgery. Is routine thrombo-prophylaxis required?
Ryan Davies, Christopher Williams, Rachel Rayment
University Hospital of Wales, Cardiff

26. A review of the quality of clinical letters: is there a difference between electronic patient record generated (ePR) and conventional dictation
Anjali Gupta, Jonathan Finnity, Saaeha Rauz
Birmingham and Midland Eye Centre

27. Lothian Optometry Teach and Treat (LOTT) Clinic: Optometrist and Patient Outcomes
Kim Ah-See, Claire Tochel, Donald Cameron, Abha Gupta
National Education for Scotland/NHS Lothian

28. Audit to improve the efficacy of clinical coding resulting in improved revenue generation from Laser procedure in Ophthalmic outpatient
Ioana Pereni, Nimish Shah, Nirmala Jha
Great Western Hospital, Swindon

29. Risk of radiation cataractogenesis due to CT head positioning
Nicolas Dziadulewicz, Nadeem Ali, Lakshmi Ratnam
St George's Hospital

30. Clinical outcomes following intravitreal steroid implant (Ozurdex) for Retinal Vein Occlusions
Adam Kara, Samantha Mann
St. Thomas' Hospital, London

31. Variation in quality and availability of patient information leaflets in East Anglia
David Bishop, John Somner, Keith Martin, Jesse Gale
Addenbrooke's Hospital

32. Do patients with diabetic retinopathy need earlier referral to the diabetes specialists?
Sunil Mamtora, Teresa Sandinha, Peter Carey
Sunderland Eye Infirmary

33. Pilot multi-centre electronic trabeculectomy audit
John Somner, Robert Johnston, Mitch Menage, Keith Martin, Madhu Nagar, John Sparrow, Rupert Bourne
Vision & Eye Research Unit, Anglia Ruskin University

34. Audit of retinal screening uptake in young adult diabetic patients
Monil Karia, Kevin Baynes
Ealing Hospital

35. Experience of Dexamethasone Implant (Ozurdex) in the Treatment of Macular Oedema in Retinal Vein Occlusion in a District General Hospital
Alan Abraham, Richard Manns, Mandeep Singh Bindra
Stoke Mandeville Hospital

36. Outcomes of diabetic patients with asymptomatic retinal emboli detected by retinal screening
Afsara Ahmmed, Teresa Sandinha, Peter Carey
Sunderland Royal Hospital

37. Twelve month visual acuity outcomes and treatment frequency for retinal vein occlusion treated with intravitreal ranibizumab.
Richard Barry, Colin Chu, Ahmed Sallam, Quresh Mohamed, Emily Fletcher, Robert Johnston
Gloucestershire Hospitals NHS Foundation Trust

38. MRI head: Do we, as Ophthalmologists request and follow up scans appropriately?
Shreya Haldar, Bina Parmar
Milton Keynes General Hospital

39. Audit of Visual Impairment Certification in Patients with Diabetes Mellitus.
Gisela Barcat Angelelli, Tomas Burke, Fiona Cuthbertson
Royal United Hospital

40. Aiming for Perfection: a Closed-loop Audit into Retinopathy of Prematurity Screening
Ruth Darbyshire, Vernon Long
Leeds Teaching Hospitals Trust

41. Audit on the Outcomes of Pterygium Surgery with Conjunctival Autograft and Fibrin Glue
Alexandra Oltea Puiu, Sathish Srinivasan
Departement of Ophthalmology, University Hospital Ayr

42. Does AdenoPlus test have a role in the Acute set-up in patients with recurrent conjunctivitis, those with conjunctivitis not responding to treatment or unknown cause for conjunctivitis?
Stavroula Boukouvala, Lisa Berry, Linzi Randle, Michelle Ford, Judith Timms, Purnima Mehta
University Hospital Of Coventry And Warwickshire

43. iCare Rebound Tonometry versus Goldmann Tonometry when used by the non-ophthalmologist
Radon Reynolds, Cheryl Macgregor, Roger Humphry
Salisbury District Hospital

44. The intra-ocular pressure is as good as your tonometer!
George Moussa, Ibrahim Elaroud, Faisal Idrees, Walter Andreatta, Velota Sung
Birmingham Midland Eye Centre

45. Improving Acute Eye Consultations in General Practice
Michelle Teo
Birchwood Medical Practice, Lincolnshire NHS Trust

46. Aligning the UK Minimum Cataract National Data Set with the International Consortium for Health Outcomes Measurement Minimum Standard Set: moving towards global outcomes measurement
Imran Mahmud, Thomas Kelley, John Sparrow
International Consortium for Health Outcomes Measurement

47. Amblyopia: Key Performance Indicators
Kelly MacKenzie, Alison Davis
Moorfields Eye Hospital

48. Financial implications for on the day cancellation of ophthalmic surgery
Priscilla Mathewson, Fiona Mason, Soupramanien Sandramouli
New Cross Hospital, Wolverhampton

49. A Service Evaluation of Referral-only, Eye Emergency Care Delivery Model
Aws Al-Hity, Sumona McLaughlin, Elisabeth Macdonald, Paul Cauchi, Deepa Anijeet
Gartnavel General Hospital

50. A Retrospective Review Of Orbital Lesion Biopsies In A Regional Tertiary Unit
Kaveeta Kaur Bedi, Karnesh C Patel, Bernard Chang, George Kalantzis
St. James's University Hospital, Leeds

51. Post-cataract surgery endophthalmitis: incidence and associated factors with subconjunctival antibiotic prophylaxis: a review of 32,982 cases
Jonathan Kirk, Robert Johnston, Kim Titcomb, Ahmed Sallam
Cheltenham General Hospital

52. Socioeconomic deprivation & incidence of serious ocular trauma in Scotland
Liying Low, James Hodson, Daniel Morris, Parul Desai, Caroline MacEwen
University of Dundee

53. Adherence to recommended patient selection criteria for ocriplasmin therapy.
Shams-Ulislam Ilyas, Edward W J Pritchard, Soha Amar, Yit Yang, Niro Narendran
Wolverhampton Eye Infirmary

54. Are Inflammatory Markers at the Time of Temporal Artery Biopsy Predictive of Diagnostic Outcome? An 8-year retrospective-cohort study.
Anna Louise Pouncey, Harry O Orlans, Veronica M G Ferguson
Imperial College NHS Healthcare Trust

55. A retrospective study of Descemet-stripping automated endothelial keratoplasty (DSAEK) results over twelve months
Jordan Chervenkoff, Sunil James, Venkata Avadhanam, Christopher Liu
Sussex Eye Hospital

56. Using EPR to identify eligible patients to implement NICE TA 301 (fluocinolone acetonide, ILUVIEN for diabetic macular oedema [DMO])
Farhat Butt, Saadia Chaudhry, Rehna Khan
Calderdale Royal Hospital

57. A twisted tale of ocular torsion
Louise Ramskold, Vaishali Lodhia, Alistair Jones, Saurabh Jain
Royal Free Hospital

CATARACT & REFRACTIVE SURGERY

58. Propofol Sedation with Peribulbar Anaesthesia for Cataract Surgery.
Yamini Krishna, Gediminas Sidaras, Stephen Kaye
Royal Liverpool University Hospital

59. Cataract Surgery in Patients with Learning Disability
Egle Rostron, Rachel Pilling
Bradford Royal Infirmary

60. The use of an iris fixated intraocular lens to correct aphakia in the absence of adequate capsular support
Douglas Lyall, Deepa Anijeet, Kanna Ramaesh, Sanjay Mantry
Gartnavel General Hospital, Glasgow

61. Telephone follow-up for cataract surgery: feasibility and patient satisfaction study
Jeremy Hoffman, Caroline Conlon, Caroline Davies, Verity Nicholas, Lucia Pelosini
Surrey and Sussex Healthcare NHS Trust

62. Outcomes of Correction of High Astigmatism with Rayner Toric Monofocal Intra-Ocular Lens during cataract surgery
Su Ling Young, Yu Han Ong, Aravind Reddy
Aberdeen Royal Infirmary

63. Cataract surgery and the internet; is it a reliable source of information for patients?
Guy Mole, Daniel Sibley
Stoke Mandeville Hospital

64. Diabetic Retinopathy increases the risk of macular oedema after cataract extraction
Colin Chu, Charlotte Buscombe, Ahmed Sallam, Quresh Mohamed, Robert Johnston
Cheltenham General Hospital

65. Wavefront-optimised VERSUS Topoguided Ablation for LASIK in Myopia: A Contralateral Eye Study
Anand Pasari, Arun Kumar Jain, Chintan Singh, Partha Chakma
Advanced Eye Centre, PGIMER, Chandigarh, India

66. Exploring the association between gender and pre-operative visual acuity in patients undergoing cataract surgery
Obeda Kailani, Zaid Shalchi, Omar Mahroo, Christopher Hammond, Genevieve Larkin
King's College Hospital

67. Human Factors Training for Cataract Theatre Teams
Polly Dickerson, James Innes
Hull and East Yorkshire Eye Hospital

68. Wrong IOL Events - A Review of incidents reported to the National Reporting and Learning System: 2010-2014
Laura Steeples, Melanie Hingorani, Declan Flanagan, Simon Kelly
Manchester Royal Eye Hospital; Moorfields Eye Hospital; Royal Bolton

69. Corneal indocyanine green angiography to guide medical and surgical management of corneal neovascularization.
Bernhard Steger, Vito Romano, Mark Batterbury, Colin Willoughby, Sajjad Ahmad, Stephen Kaye
Royal Liverpool University Hospital

CORNEA & EXTERNAL EYE DISEASE

70. 12 month results of KeraRing Intrastromal Corneal Ring Segments for Keratoconus
Caroline Wilde, James Ball
St James Hospital, Leeds

71. A study of corneal dystrophies in conjunction with the British Ophthalmic Surveillance Unit (BOSU).
Salina Siddiqui, Corneal Dystrophy BOSU Study Team, Barny Foot, Kamron Khan
Leeds Institute of Molecular Medicine

72. Identification of Corneal Endothelial Cell Migration using Fluoresence In Situ Hybridization
Kanna Ramaesh, Douglas Lyall, Fiona Roberts
Gartnavel General Hospital, Glasgow

73. Patient experience of cultured limbal epithelial transplantation - development of a Quality-of-Life based outcome assessment questionnaire
Derek K-H Ho, Carol Porteous, Richard Cable, Catey Bunce, Alex Shortt
Moorfields Eye Hospital

74. Quantification and Assessment of Patient Symptoms Following Corneal Collagen Cross-linking in the Management of Keratoconus
Humera Sarwar, Doulas Lyall, Deepa Anijeet, Kanna Ramaesh, Sanjay Mantry
Gartnavel General Hospital, Glasgow

75. Long-term Outcomes of Deep Anterior Lamellar Keratoplasty in Patients with Keratoconus
Kelvin Cheng, Douglas Lyall, Sanjay Mantry, Kanna Ramaesh
Gartnavel General Hospital, Glasgow

76. Amnion-assisted Conjunctival Epithelium Redirection (ACER)
Mohamed Elalfy, Harminder Dua
Nottingham University

77. Effect of intraocular pressure and corneal drying on corneal thickness
Vito Romano, Bernhard Steger, Mark Batterbury, Sajjad Ahmad, Colin Willoughby, Ahmed Elsheikh, Stephen Kaye
Royal Liverpool Univerity Hospital

78. Long-term Safety and Efficacy of Intrastomal Corneal Ring Segments in the Management of Keratoconus
Manvi Sobti, Deepa Anijeet, Douglas Lyall, Bernie Hegarty, Eric Newcott, Kanna Ramaesh, Sanjay Mantry
Gartnavel General Hospital, Glasgow

GLAUCOMA

79. Non-penetrating glaucoma surgery following failed trabeculectomy
Sohraab Yadav, Achini Makuloluwa, Anshoo Choudhary
Royal Liverpool University Hospital

80. Peripheral Iridotomies - Have We Got it Wrong?
Wen Wei Woo, Wee Ching Ngu, Nicholas Kloster Wride, Scott George Fraser
Sunderland Eye Infirmary

81. Early results of a minimally-invasive, ab-interno gelatin stent in combination with a preoperative mitomycin C injection for the treatment of glaucoma.
Albena Dharzikova, Ejaz Ansari
Maidstone and BMI Sommerfield Hospital

82. Prior rates of visual field loss in glaucomatous patients undergoing trabeculectomy
William S Foulsham, Lanxing Fu, Andrew J Tatham
Princess Alexandra Eye Pavilion, Edinburgh

83. Connective Tissue Growth Factor and Tissue Inhibitor of Matrix Metalloproteinase-2 in Patients with Exfoliative Glaucoma
Asaad Ahmed Ghanem, Lamiaa F Arafa, Ayman El-Baz
Mansoura University

84. Are we overestimating intraocular pressure in overweight patients?
Kavita Aggarwal, Rashid Zia
William Harvey Hospital, Ashford

85. Survey on Glaucoma drainage device use: a United Kingdom perspective
Tafadzwa Young-Zvandasara, Vanessa Palmer, Andrew Feyi-Waboso
Royal Gwent Hospital

86. Prescription of Glaucoma Eye Drops
Saddaf Naji, Joshua Luis, Julian Hickman-Casey
East Sussex Healthcare NHS Trust

87. Retrospective audit analysis of post operative cystoid macular oedema rates in patients undergoing cataract surgery whilst on prostaglandin analogues
Mohamed Mohyudin, Michael Benjamin, Louay Whebeh, Thomas Ressiniotis
Heart of England Foundation Trust

88. Glaucoma patient with good acuity and Charles Bonnet syndrome (CBS).
Lik Thai Lim, Ken Lee Lai, Donald Montgomery
Stobhill Hospital

89. Outcomes of Combined Phacoemulsification and Deep Sclerectomy - A 10 year Single-centre Study
Bhagyashree Shevade, Karl Merciec, Nitin Anand
Calderdale and Huddersfield NHS Foundaton Trust

90. The influence of OCT on decision-making in glaucoma diagnosis
Lanxing Fu, Andrew Tatham
Princess Alexandra Eye Pavilion

91. Use of a slowly resorbable cross linked viscoelastic implant (Healaflow) for the treatment of pre-phthisical hypotony
Richard Stead, Suzanne Turner, Zain Juma, Velota Sung
Birmingham Midland Eye Centre

92. Patient selected educational interventions to improve glaucoma medication compliance
Mital Shah, Radhika Bali, Nasir Jamal, Chrystel Dooley, Asifa Shaikh
Stoke Mandeville Hospital

93. Human error in reporting Goldmann applanation tonometry: Do Glaucoma consultants report more accurate intraocular pressures compared to trainee doctors in glaucoma patients?
Chrishan Gunasekera, Nuwan Niyadurupola
Norfolk and Norwich University Hospital NHS Foundation Trust

94. Endoscopic Cyclophotocoagulation as an adjunct to Phacoemulsification: effect on intraocular pressure (IOP) lowering stratified by pretreatment intraocular pressure
Lei-Ai Lim, Thomas Forshaw, Michael Smith
West of England Eye Unit

95. Complication rate of elective YAG peripheral iridotomy for narrow angles, and the relevance of post-operative steroid drops
Thomas Nixon, Chandni Gupta, Sumit Dhingra
Peterborough City Hospital

96. A fixed combination of brinzolamide 1% and brimonidine 0.2% (BBFC) given twice-daily versus brinzolamide 1% (BRINZ) or brimonidine 0.2% (BRIM) monotherapy in patients with open-angle glaucoma or ocular hypertension
Ejaz Ansari
Maidstone & Tunbridge Wells NHS Trust

97. Shared Care of Patients with Stable Glaucoma and Ocular Hypertension
Shivakumar Sajjan, Andrew Enevoldson, Gerard Jayamanne
Doncaster Royal Infirmary

98. Bilateral Aqueous misdirection and spontaneous recurrence
Matthew Richardson, Obeda Kailani, Avinash Kulkarni, Edward Pringle, Dan Lindfield
King's College Hospital

99. Optometrist Referrals for Suspected Glaucoma: The NICE Age
Hannaa Bobat, Shahiba Begum, James Kirwan
Queen Alexandra Hospital, Portsmouth

MEDICAL RETINA

100. Ultra-widefield Fluorescein Angiography in Diabetic Macular Oedema Predicts Response to Ranibizumab Treatment
Kanmin Xue, Elizabeth Yang, Victor Chong
Oxford Eye Hospital

101. The Diabetic Retinopathy Education, Training and Treatment (DRETT) Project: Outcomes of a New Grading Centre in Bangladesh
Mahiul Muqit, Nick Kourgialis, Erica Khetran, Jasmin Ahmad, Rabiul Husain, Amin Uddin, David Friedman
Chittagong Eye Infirmary and Training Complex, Bangladesh

102. Patient preferences in wet age related macular degeneration
Julia Baxter, Alison Fotheringham, Alexander Foss
Queens Medical Centre

103. Aged diabetic Goto Kakizaki rats show increased markers of Alzheimer's Disease
Timothy Wong, Marianne Phillips, Shereen Nizari, M Francesca Cordeiro
UCL

104. Retinal findings in cerebral malaria
David Fraser, Shyamanga Borooah, Vincent Tiong, Ganeshan Ramsamy, Tom MacGillvray, Bal Dhillon, Richard Maude
University of Edinburgh

105. Long-term outcomes of intravitreal ranibizumab for neovascular age-related macular degeneration in a well-defined region of the United Kingdom
Robert Johnston, Miranda Buckle, Paul Donachie
Gloucestershire Eye Unit

106. Post Hoc Analyses of the MYRROR Study to Evaluate Prognostic Factors for Visual Outcomes in Patients With Choroidal Neovascularisation Secondary to Pathological Myopia
Rufino Silva
Centro Hospitalar e Universitário de Coimbra

107. Charles Bonnet Syndrome -- In patients with Age-related Macular Degeneration
Jonathan Ng, Nachiketa Acharya
Sheffield Teaching Hospitals NHS Foundation Trust

108. Intravitreal triamcinolone: Is there place for it amongst licensed treatments?
Randeep Sharma, Mabruka Azzaruk, Shahzad Shafquat
Russells Hall Hospital, Dudley

109. The effect of Zinc on Primary Human Foetal Retinal Pigment Epithelial Cells
Safiya Bishar Abdirahman, Talha Soorma, Po-Jung Pao, Imre Lengyel
UCL Institute of Ophthalmology

110. Effect of gliosis-associated factors on the progenicity and neural differentiation of Muller stem cells
Morteza Afrasiabi, Astrid Limb
Institute of Ophthalmology,UCL

111. Nine-month outcome of aflibercept intravitreal injections in patients with wet age-related macular degeneration (wAMD) unresponsive to intravitreal ranibizumab.
Rachel Hui Fen Lim, Sophie McGlade, Thomas Forshaw, Bhaskar Gupta, Alicia Ng, Peter Simcock
Royal Devon and Exeter NHS Foundation Trust

112. The influence of vitreo-macular adhesion on outcomes following aflibercept therapy for neovascular age-related macular degeneration
Martin McKibbin, Carlo Suter, Tom Willis
Leeds Teaching Hospitals NHS Trust

113. South Asian diabetic macular oedema treated with ranibizumab (ADMOR) - real-life experience
Charlotte Hazel, Faruque Ghanchi
Bradford Teaching Hospitals NHS Foundation Trust

114. Prevalence of diabetic retinopathy, cataract and visual impairment in patients with diabetes in the Copperbelt region, Zambia.
Adam Lewis, Manju Chandran, Andrew Elliott, Lorraine North, Geeta Menon
Frimley Park Hospital, Frimley Health NHS Foundation Trust

115. Iluvien® in chronic Diabetic Macular Oedema - real life experience.
Zeid Madanat, Faruque Ghanchi, Nicola Hawes, Hayley Higgins
Bradford Teaching Hospitals

116. Rifampicin orally to treat Chronic CSR patients
Rashi Arora, Niaz Islam
Moorfields Eye Hospital

117. Visual Acuity Outcomes Based on Baseline Central Retinal Thickness in VIVID-DME and VISTA-DME
Sabine Aisenbrey, Frank Holz, Carola Metzig
Multicentre

118. Intravitreal Aflibercept for Macular Oedema due to Branch Retinal Vein Occlusion
David Boyer, Peter Campochiaro, Friedrich Asmus
Multicentre

119. Patient satisfaction with conventional vs Invitrea device for intravitreal injection
Saanan Umeed, Mohamed Jama, Annthea Clarke, Hmwe Thynn
Ysbyty Gwynedd

120. Characteristics and outcomes of intravitreal Ocriplasmin injections for Vitreomacular traction at Worcestershire Acute Hospitals NHS Trust.
Xiaoxuan Liu, Salman Mirza
Worcestershire Acute Hospitals

121. Efficacy of four repeated dexamethasone implants for macular oedema secondary to retinal vein occlusion
Mark Lane, Narendra Dhingra
Pinderfields Hospital

122. "Exudates" and the molecular sieve of the retina
Sanjay Srivastava, David Mansfield, Fatemeh Shams
Inverclyde Royal Hospital

123. Proposed diagnostic criteria for choroidal tumors by Optical Coherence Tomography
Mohamed I Nowara, Ahmed M Habib, Emad S Elsawy, Hisham M Hassan, Ihab A Mohamed, Ashraf H Soliman, Rehab A Ismail
Retina Consulting Center

124. Macular laser for diffuse and focal diabetic macular oedema - evaluation of response to treatment using optical coherence tomography
Aidan Benson, Mohammed A Albeedh, Zia I Carrim
Leeds Teaching Hospitals NHS Trust

125. Efficacy and safety of intravitreal dexamethasone implants for macular oedema secondary to retinal vein occlusion; 3 year experience at 3 centres
Aisling Higham, Sarita Jacob
Heart of England NHS Foundation Trust

126. Efficacy and safety of Lucentis for Diabetic Macular Oedema in a Tertiary Centre.
Freddy Beer, Sam Khandhadia, Andrew Malem, Christina Rennie
Southampton General Hospital Eye Unit

127. Real world outcome of providing aflibercept according to the VIEW protocol for AMD
James Talks
Newcastle Upon Tyne Hospitals NHS Foundation Trust

128. NICE guided ranibizumab treatment of Centre-Involving Diabetic Macular Oedema: outcomes associated with baseline characteristics at 6 months
Archana Airody, Divya Venugopal, Aleksandra Mankowska, Fiona Bailey, Nicola Topping, Richard Gale
York Teaching Hospitals NHS Foundation Trust

129. The incidence of severe diabetic macular oedema (≥ 400µ) in the ethnically diverse population of north-east London
Alastair Porteous, Roopa Vemala, Muhammed Nazir, Cordelia McKechnie, Sudeshna Patra
Whipps Cross Hospital

130. The incidence and outcome of post-cataract surgery cystoid macular oedema (CMO) in an ethnically diverse and predominantly diabetic population.
Fotios Tsogkas, Sudeshna Patra
Bartshealth NHS Trust

131. Visual outcomes after switching treatment from IVI ranibizumab to aflibercept in wet AMD patients resistant to ranibizumab
Ketevan Pachkoria, Keshma Karia, Aires Lobo
Moorfields Eye Unit@ Bedford

132. One year Diabetic Macular Oedema (DMO) treatment with intravitreal (IVT) anti Vascular Endothelial Growth Factor (anti VEGF), injections. Real world results
Spyridon Mourtzoukos, Dimitar Brankov, Kate Bolton, Veronika Mass Tur, Sarah Meredith
Queen Alexandra Hospital

133. Intra-vitreal ocriplasmin for symptomatic vitreo-macular traction (VMT) - the Yorkshire Retina Society experience.
Richard Gale, Grigorios Tzamos, Martin McKibbin, David Steel, Gavin Walters, Murtaza Mookhtiar
Leeds Teaching Hospitals Trust

134. 'Treat and Extend' versus 'Pro Re Nata' dosing regimens for Ranibizumab in the Treatment of Neovascular Age Related Macular Degeneration
Joshua Luis, Seyedmahdi Manafi, Harry O. Orlans, Saad Younis
Western Eye Hospital

135. Diabetic Maculopathy OCT imaging clinic - 2 year risk for progression
Gerald Lewis, Christina Rennie
Southampton Eye Unit

136. Intravitreal Aflibercept (Eylea) treatment of Neovascular AMD in patients with a sub-optimal response to conventional Intravitreal Ranibizumab therapy
Osama Giasin, Naser Ali, Mohamed Elmi, Mohammed Riaz Ahamed, Raghu Ram, Amit Gaur
Royal Glamorgan Hospital

137. Patient Perspective on Symptomatic Self-Monitoring of Diabetic Eye Disease
Angela Holden, Korina Theodoraki, Marie Tsaloumas, Derek Kyte, Melanie Calvert, Alastair Denniston
Queen Elizabeth Hospital Birmingham

138. Renal transplantation improves retina in husband's kidney disease
Ning Brigid, Kun Yin, Monica Michelotti, Rita Prajapati, Simon Kelly
Royal Bolton Hospital

139. Chronic diabetic macular odema patients treated with ranibizumab explored using a novel visual method of clinical outcomes presentation following 12 months of such treatment in real world DGH clinical audit setting
Kirti Jasani, Andrew Walkden, Jiten Morarji, Brigid Ning, Emma McKenna, Evangelos Sioras, Simon Kelly
Royal Bolton Hospital

140. Visual Acuity Loss in the Retrospective Natural History of the Progression of Atrophy Secondary to Stargardt Disease (ProgStar-1) Study
Rupert Wolfgang Strauss, Michel Michaelides, Sheila West, Xiangrong Kong, Beatriz Munoz, SriniVas Sadda, Hendirk PN Scholl
Wilmer Eye Institute, Johns Hopkins University, Baltimore

141. Prospective on-going audit of Iluvien outcomes for diabetic macular oedema at the University Hospitals of Leicester (UHL)
Alexander James Brent, Soon Wai Ch'ng, Theodoros Empeslidis, Somnath Banerjee
Leicester Royal Infirmary

142. Orthoptist-delivered Intravitreal anti-VEGF Injections
Lorraine North, Manju Chandran, Geeta Menon
Frimley Park Hospital

143. 35mm slides - a novel target to simulate laser treatment
Seema Arora, Polly Dickerson, James Innes, Larry Benjamin
Hull and East Yorkshire Eye Hospital

144. The cost effectiveness of aflibercept compared to ranibizumab and laser in the management of diabetic macular oedema (DMO)
Jennifer Priaulx, Jacqueline Napier, Victor Barzey, Eleonora Lovato
Private Company

145. Visual acuity outcomes at 12 months in NHS patients treated with Ranibizumab for diabetic macular oedema (DMO)
Georgios Dimtsas, Helen Cook, Seema Arora, Kala Gopalakrishnan, Victoria Allgar, Louise Downey
Hull and East Yorkshire NHS Trust

146. Diffuse macular leakage with peripheral capillary non-perfusion - a distinct angiographic phenotype of diabetic retinopathy?
David Burton, Zia Carrim
St James's University Teaching Hospital

147. Influence of duration of type 1 diabetes on prevalence of diabetic retinopathy and visual acuity as detected in a Diabetic Retinopathy Screening Programme
Alasdair Warwick, Miss Radhika Krishnan, Dr Andrew Brooks
University Hospital Southampton NHS Foundation Trust

148. Does delay in hospital eye service (HES) outpatient appointments impact visual acuity (VA) in proliferative diabetic retinopathy (PDR) patients referred from the Diabetic Eye Screening Programme (DESP)?
Guy Negretti, Catherine Egan, Dawn Sim
Moorfields Eye Hospital

149. Safety outcomes in the UK for 5075 patients with neovascular age-related macular degeneration (nAMD) treated with ranibizumab for one year: LUMINOUS UK second interim analysis results
Geeta Menon, Christopher Brand, Shahrnaz Izadi, Sue Lacey
49 UK sites. Ms Menon's Site is Frimley Park Hospital

150. Glasgow Eylea Experience- One Year Outcomes
Ore-Oluwa C Erikitola, Magdalena Edington, Sara Ramamurthi, David Gilmour, Mike Gavin, Manish Gupta
Gartnavel General Hospital

151. Cataract Surgery in Patients with Active Choroidal Neovascularisation - Examination of Current Practice Amongst UK Ophthalmic Surgeons
Huzaifa Malick, Nizar Din, Rehan Rajput, Bushra Mushtaq
Sandwell General Hospital, West Bromwich

152. UK national database of intravitreal dexamethasone implant (Ozurdex®) for retinal vein occlusion related macular oedema. Demographics and outcome of treatment
Ahmed Sallam, Javier Zarranz Ventura, Rob L Johnston, UK Dexamethasone Implant Study Group
Gloucestershire Hospitals

153. Acute angle closure glaucoma secondary to intraocular haemorrhage in patients on warfarin use - a case series
Alexander Chiu
Royal Glamorgan Hospital

154.The UK DR EMR Users group:multicentre study of ranibizumab Injections: report 1: visual acuity
Alastair Denniston, Haogang Zhu, Aaron Lee, David Crabb, Catherine Egan, Robert Johnston, On behalf of the UKDR EMR Users Group
Moorfields Eye Hospital

155. The use and effect of anti-VEGF therapies used in clinical practice for DMO in the UK
Miranda Buckle, Irene Stratton, Martin McKibbin, Cynthia Santiago, Elizabeth Wilkinson, Peter Scanlon
Gloucestershire Eye Unit

156. The UK DR EMR Users group:multicentre study of ranibizumab Injections: Report 2: Impact of cataract surgery
Alastair Denniston, Haogang Zhu, Aaron Lee, David Crabb, Catherine Egan, Robert Johnston, On behalf of the UKDR EMR Users Group
Moorfields Eye Hospital

157. SOE PRIZE WINNER 2015

UK AMD EMR USERS GROUP REPORT V: Benefits of initiating Ranibizumab Therapy for Neovascular AMD in Eyes with Vision Better than 6/12
Cecelia Lee, Adnan Tufail, Usha Chakravarthy, Marie Tsaloumas, Thomas Butt, Aaron Lee, UK AMD EMR USERS GROUP
Moorfields Eye Hospital

NEURO-OPHTHALMOLOGY

158. Validation of Ishihara's plates and Edridge green lantern against anomaloscope
Amit Kumar Chawla, Jugal Kishore
Guru Nanak Eye Centre & Maulana Azad Medical College

159. To validate and assess the performance of the Saccadic Vector Optokinect Perimetry (SVOP) in an adult population who have suffered a stroke or traumatic brain injury (TBI).
Jayesh Khistria, Graham Thompson, Arani Nitkunan
Moorfields at St George's

160. A unique case of Internuclear Ophthalmoplegia in the setting of a Thrombosed Internal Carotid Artery aneurysm
Chan Ning Lee, Uche Nosegbe
Royal Blackburn Hospital, East Lancashire Healthcare Trust

161. Severe optic neuropathy following electrical injury.
Kelvin K Y Wong, Ken Lee Lai, Donald Montgomery
Glasgow Royal Infirmary

162. Role of Imaging in Isolated Sixth Nerve Palsy in Adults
Bridget Buckley, Sunila Jain
Royal Preston Hospital

163. Retinal Nerve Fibre Layer Thinning in Different Xeroderma Pigmentosum Complementation Groups
Anna Maria Gruener, Rongxuan Lim, Ana Maria Susana Morley
St Thomas' Hospital, London

164. High Resolution Imaging of the Optic Nerve and Retina in Optic Nerve Hypoplasia
Anastasia Pilat, Daniel Sibley, Rebecca J. R. J McLean, Frank A. Proudlock, Irene Gottlob
University of Leicester

165. Chikungunya-related optic neuropathy
Adriana Agiuz-Fernandez, Abhijit Mohite
Burton Hospitals NHS Foundation Trust

166. Incidence of Idiopathic Intracranial Hypertension in Fife
Colin Goudie, Jennifer Burr, Andrew Blaikie
NHS Fife

167. An unusual case of double vision.
Martin Bennett
Bristol Eye Hospital

OCULAR MOTILITY

168. Intraoperative Botulinum Toxin in Large Angle Horizontal Strabismus
Shweta Anand, Saurabh Jain, Alistair Jones
Royal Free London Hospitals NHS Foundation Trust

169. Opaque Intraocular Lenses for Intractable Diplopia: A Retrospective Case Series
Jacintha Gong, Caroline MacEwen, Una O'Colmain, John Ellis
Ninewells Hospital

170. Comparing the effect of surgery versus botulinum toxin A injection on quality of life in adults with strabismus.
Rohan Hussain, Saurabh Jain
Royal Free Hospital

OPTICS & REFRACTION

171. Eye and hand fatigue in minimal invasive surgery; 2D vs 3D: Randonmised Trial
Adham Youssef, Walid Elbakbak, Amina Bouhelal, Bijen Patel
Barts Cancer Institute

ORBIT & OCULOPLASTICS

172. Orbital ORF: a case review
Shokufeh Tavassoli, Glynn Baker
Cheltenham General Hospital

173. Pre-moulded custom implants for spheno-orbital reconstruction
Sam Evans, Daniel Morris, Carol Lane, Satyajeet Bhatia, Caroline Hayhurst
UHW, Cardiff

174. Predictive parameters of response to intravenous methylprednisolone immunosuppression in the management of active thyroid eye disease
Maria Amesty, Ruth Chen, Lorraine Abercrombie, Katya Tambe
Nottingham University Hospitals

175. A comparison of long-term outcomes between external and endoscopic dacryocystorhinostomy
Paul McCann, Mark Halliwell, Indira Madgula
Warrington and Halton NHS Foundation Trust

176. Dynamic digital subtraction dacryocystography for paediatric epiphora
Ruth Chen, Maria Amesty, Julia Baxter, Shery Thomas, Timothy Taylor, Lorraine Abercrombie, Katya Tambe
Nottingham University Hospitals

177. Impact of prognostic indicators on final visual outcome following penetrating ocular trauma: a review of 40 cases
Alexander Dryden, Tahir Farooq, Murray Aidan
Birmingham Midlands Eye Centre

OTHER

178. Fungal endophthalmitis as a complication of endoluminal vacuum therapy in general surgery
Megan Wood, David Wright
Southern General Hospital, Glasgow

179. A Comparison of Research Productivity in Ophthalmic Subspecialities
Jeffry Hogg, Arthur Okonkwo, Chiedu Ufordiama, Rishi Dhand, James Muggleton, Francisco Figueiredo
Newcastle University and Newcastle upon Tyne Hospitals

180. An 8 Year Analysis of UK Ophthalmic Publication Rates
Arthur Okonkwo, Jeffry Hogg, Chiedu Ufordiama, Rishi Dhand, James Muggleton, Francisco Figueiredo
Newcastle University and Newcastle upon Tyne Hospitals

181. Phacoemulsification training in an independent sector treatment centre (ISTC) - the Severn Deanery experience.
Tomas Burke, Katherine McVeigh, Teresa Anthony
Royal United Hospital Bath

182. Survey of current undergraduate ophthalmology teaching across the UK
Farihah Tariq, Mohamed Loutfi, Mark Watts
Raigmore Hospital, Inverness

183. De-mystifying the direct ophthalmoscope for medical students: Evaluation of a novel device for teaching and assessment
Christopher Schulz, Jonathan Moore, Deniz Hassan, Elise Tamsett, Claire Smith
Brighton and Sussex Medical School

184. Consensus on outcome measures for glaucoma effectiveness trials: results from a Delphi and Nominal Group Technique approaches
Rehab Ismail, Augusto Azuara-Blanco, Craig Ramsay
Health Services Research Unit, University of Aberdeen

185. Curvesite: A novel scleral marker for intravitreal injections
Narendra Dhingra
Pinderfields Hospital

186. Adoption of Electronic Medical Records in Eye Units across the UK
Shin Lim, Humma Shahid
Addenbrooke's Hospital, Cambridge, United Kingdom

187. The Arclight Ophthalmoscope: an economic alternative to the standard direct ophthalmoscope
Charles Cleland, James Lowe, Evarista Mgaya, Godfrey Furahini, Matthew Burton and Heiko Phillipin
Kilimanjaro Christian Medical Centre, Tanzania

188. A novel, safe and cost effective way for teaching corneal foreign body removal
Mei-Ling Cheng, Lanxing Fu, Peter Cackett
Princess Alexandra Eye Pavilion

189. Profile of the ocular dimensions, interocular asymmetry and their associations in an older white population: The Edinburgh Eye Study
Yan Ning Neo, Baljean Dhillon
Princess Alexandra Eye Pavilion, Edinburgh

190. Systematic review of endophthalmitis in Boston type 1 keratoprosthesis
Carlos M P D Santos, Venkata S Avadhanam, Samuel T Cole, Christopher S C Liu
Brighton and Sussex Medical School

191. The Fate of Ophthalmology Trainees in the UK - CCT Holders 2007 to 2010
Varsha Kadaba, Oliver Bowes, Susannah Grant, Michael O'Gallagher, Faisal Idrees, Inderraj Hanspal, Nuwan Niyadurupola
Royal College of Ophthalmologists

PAEDIATRIC OPHTHALMOLOGY

192. Ophthalmic abnormalities in children with specific learning disorder with reading impairment (formerly dyslexia)
Alexandra Creavin, Raghu Lingam, Colin Steer, Cathy Williams
University of Bristol

193. Are Paediatric Clinic DNA Rates Affected by School Holidays and Inclement Weather?
Gwyn Williams, Christopher Blyth, David Laws
Singleton Hospital, Swansea

194. Non-contact ultra-widefield retinal imaging of infants with suspected abusive head trauma
Imran Yusuf, J. Kate Barnes, Timothy H.M. Fung, John S. Elston, C.K. Patel
Oxford Eye Hospital

195. Study of Optimal Perimetric Testing In Children (OPTIC) - Comparing Goldmann and Octopus kinetic perimetry in children without visual field defects.
Dipesh Patel, Phillippa Cumberland, Isabelle Russell-Eggitt, Bronwen Walters, Jugnoo Rahi, for the OPTIC study group
UCL Institute of Child Health

196. Bilateral Congenital Dacryocystoceles: Now you see it, now you don't
Lien Brett, John Bradbury, Peter Atkinson
Bradford Royal Infirmary

197. Visual Acuity And Associations In Children With High Hypermetropia
Hugh Jewsbury, Patrick Watts, Marian Okeya, William John Watkins, Sailesh Kotecha
University Hospital Of Wales, Cardiff

198. Sight-threatening deficiency of vitamin A in young males with autistic spectrum disorder
Fatemeh Shams, David Mansfield
Inverclyde Royal Hospital

199. Internal ophthalmoplegia in children treated with anti-ganglioside antibodies for stage 4 advanced neuroblastoma
Evangelos Drimtzias, Danielle Guy, David Dunleavy, Susan Picton, Ian Simmons
St James University Hospital, Leeds, UK

200. UK population-based surveillance study into choroidal neovascularisation in children
Mariya Moosajee, Catey Bunce, Barny Foot, Anthony Moore, James Acheson
Moorfields Eye Hospital

201. A review of guidelines for Ophthalmology screening of children with sensorineural deafness
Ahmed Hamroush, Vernon Geh
Southend Hospital

202. Retinopathy of prematurity (ROP) in 23 and 24-week gestation babies between 2000-2013 in Newcastle
Ayad Shafiq, David Cottrell, Alan Fenton
RVI Newcastle

203. Severe corneal complications in children with blepharitis
Diyaa Rachdan, M. Saad Khan, Asim Ali, Kamiar Mireskandari
The Hospital for Sick Children, Toronto

204. Incidence of severe retinopathy of prematurity requiring laser treatment in Glasgow
Dilys Oladiwura, Donncha Mullin, Seen Nee Chia, Aonghus McGivney, Tim Lavy
Royal Hospital for Sick Children Yorkhill Glasgow

205. Asymptomatic Optic Disc swelling in children: Papilloedema or not?
Yun Wong, Michael Clarke, Georgios Laspias
RVI Newcastle

206. Child-parent agreement on patient-reported outcome measures (PROMs) of visually impaired child's quality of life and functional vision
Val Tadic, Phillippa Cumberland, Gillian Lewando Hundt, Jugnoo Rahi
UCL Institute of Child Health

207. Evaluation of a Novel Digital Infant Acuity Test
Laura Butler, Esther Misanjo, Iain Livingstone
Lions Sight First Eye Unit

UVEITIS

208. Outcomes of Intravitreal Ozurdex In Patients With Non-Infectious Uveitis
Mohamad Zaher Kanaan, Ranjeet Pandit
Royal Victoria Infirmary

209. Intravitreal Sirolimus Improves Inflammation and Preserves Visual Acuity in Subjects with Non-Infectious Uveitis (NIU) of the Posterior Segment: Results from SAKURA Study 1
Carlos Pavesio, Yang Yang, Abu Abraham, Marye Ellen Valentine, Michael Rinehart, Rebecca Senic
Moorfields Eye Hospital

210. Efficacy and Safety of Rituximab in the Treatment of Ophthalmic Complications of Systemic Vasculitis or Systemic Lupus Erythematosus (SLE)
Christopher Holmes, Shams Ilyas, Hema Kolli, Efrosini Papagiannuli, Matthew Morgan, Susan Mollan, Alastair Denniston
University Hospitals Birmingham NHSFT

VITREO-RETINAL DISEASES & SURGERY

211. Sleeping position is a risk factor for retinal vein occlusion
Katerina Constantinou, Nicholas Andreou, Theodoros Potamitis
Pantheo Eye Centre

212. Pseudophakic CMO - an evaluation of the effectiveness of Posterior Sub-Tenon Triamcinolone (PSTT) injections.
Alasdair Kennedy, Tony Leong, Salwan Rassam, Chee Kon
WSHFT

213. Dome-shaped macular configuration: longitudinal changes in the choroid and sclera by swept-source optical coherence tomography over two years
Abdallah Ellabban, Abdallah Ellabban, Akitaka Tsujikawa, Akio Oishi, Kenji Yamshiro, Sotaro Ooto, Nagahisa Yoshimura
Kyoto University

214. Rotational Stability of Toric Intraocular Lens In Presence of Intravitreal Perflouropropane (C3F8) Gas
Milind Sawant, Riaz Asaria
Royal Free Hospital, London

215. Chronic diabetic macular oedema in pseudophakic eyes that underwent vitrectomy for advanced proliferative diabetic retinopathy
Kunal Gadhvi, A. Hawrami, I. Dooley, C.J. Mckechnie, H.J. Zambarakji
Whipps Cross University Hospital

216. Whiplash injury and ocular trauma: a case series and literature review
Mary Awad, Paul Chua, Vijay Hegde
Aberdeen Royal Infirmary

217. Risk of cystoid macular oedema after cataract surgery in eyes with pre-existing epiretinal membrane
Sofia Theodoropoulou, Colin Chu, Quresh Mohamed, Rob Johnston, Ahmed Sallam
Gloucestershire Hospitals NHS Foundation Trust

218. Ocriplasmin Therapy for Vitreomacular Traction: Clinical Trial and Postmarketing Safety
Tim Jackson
King's College London

219. INJECT: Investigation of JETREA in Patients With Confirmed Vitreomacular Traction - Interim analysis results
David Steel
Sunderland Eye Infirmary

220. Maze navigation: Improving the assessment of functional vision in the RPE65 gene therapy trial
Kareem Mahgoub, Walid Sharif, Andy Rider, Peter Jones, Gary Rubin
UCL Institute of Ophthalmology

221. Exploratory analyses of long-term visual outcomes based on baseline vision in patients with chronic and nonchronic diabetic macular oedema (DMO) treated with fluocinolone acetonide (FAc)
Louise Downey, Usha Chakravarthy
FAME trial

DVD EXHIBITION

1. Removal of artificial iris implants due to bilateral angle closure glaucoma and corneal decompensation

Sarmi Malik, Abdul-Jabar Ghauri, Rosemary Robinson, George Smith
University Hospital, Coventry

2. A novel technique for removal of migrated Iluvien implant into the Anterior Chamber

Ibraheem El-Ghrably
James Cook University Hospital

3. "Radial Reading": a novel way to read despite absence of central vision

David Colin Mansfield
Inverclyde Royal Hosptal

4. Thiel - The "Real Deal" for Strabismus Surgery Simulation?

Polly Dickerson, James Innes, David Roberts
Hull and East Yorkshire Eye Hospital

5. Revealing the Hidden- Endoscopic Visualisation in Glaucoma and Anterior Segment Surgery

Achyut Mukherjee, Avinash Kulkarni, Emma Hollick, Sophie Jones, Dan Lindfield
King's College Hospital, Obeda Kailani

6. Phaco-ECP: Observations from Five Years of Clinical Practice

Huw Oliphant, Line Langsaeter, Pieter Gouws
Conquest Hospital

7. Key steps in Repair of Traumatic LASIK flap Dehiscence

Fiona Jazayeri, David Anderson
University Hospital Southampton NHS Foundation Trust

OPTIC UK

Annual Congress Commercial Exhibition
The UK's largest ophthalmic exhibition will be open throughout the Congress. The exhibition is organised by Optic UK as part of their continuing support to the ophthalmic profession.

Exhibiton opening hours:
Tuesday 19 May 2015 8.00 to 19.00
The Exhibition will be open during the drinks reception
Wednesday 20 May 2015 8.30 to 17.30
Thursday 21 May 2015 8.30 to 15.00

The Optic UK Lecture 2015
The seventh Optic UK Lecture will take place on Thursday 21 May 2015. We are delighted that the eminent and world-renowned speaker Professor Anita Agarwal will be delivering this year's lecture. Please see page 24 for more details on Professor Agarwal.

EXHIBITING COMPANIES

Actelion Pharmaceuticals Ltd **Stand 20**

Actelion Pharmaceuticals Ltd is the UK & Eire arm of an independent biopharmaceutical company with headquarters in Basel, Switzerland, focusing on the discovery and development of innovative treatments to particularly serve high unmet medical needs in Orphan and Ultra-Orphan diseases. www.npc-info.com and www.actelion.com

Alcon Eye Care UK & Novartis Pharmaceuticals UK Ltd **Stand K**

Novartis is dedicated to the research, development and manufacture of ophthalmic pharmaceuticals and devices with a mission to improve eye health.

Alimera Science Ltd **Stand T**

Alimera Sciences Ltd is a biopharmaceutical company specialising in the research, development and commercialisation of prescription ophthalmic pharmaceuticals. We are presently focused on diseases and disorders of the Retina and have Marketing Authorisation for ILUVIEN®, indicated for chronic diabetic macular oedema (DMO) considered insufficiently responsive to available therapies in fifteen countries including UK and in September 2014 gained FDA approval in the US.

Allergan Ltd **Stand P**

Altacor **Stand 36**

Altacor is a specialist Ophthalmic company offering novel products for Dry Eye, Macular Degeneration and Blepharitis. We have the only resealable, unit dose preservative free 0.4% HA, including a NEW Multidose to unveil at the exhibition. www.altacoreyeproducts.com

Altomed Ltd **Stand J**

As well as displaying new products such as the enhanced Malyugin Ring and the Allegro Handpiece from MST, there is also a debut for AlaHeavy, the new unique heavy-oil from Alamedics. Again Altomed have dedicated a large portion of their stand to seating and tables. Bring your refreshments and relax in comfort with your colleagues.

AMO United Kingdom Ltd **Stand G**

Bausch & Lomb UK Limited **Stand D**

We are dedicated to providing the most convenient, advanced and integrated solutions across cataract, femto-cataract and vitreoretinal surgery: offering holistic support, whatever your surgical approach.

Bayer HealthCare **Stand H**

Bayer HealthCare is committed to the global community of patients with ophthalmic disorders. Please come and visit the Bayer Healthcare stand to find out more about our Ophthalmology portfolio.

Beaver-Visitec International **Stand L**

With over 80 years of experience, Beaver-Visitec International (BVI) is a leading, world class, single use instrument surgical company across all ophthalmic specialties.

BIB Ophthalmic Instruments **Stand 14**

BIB Ophthalmic Instruments are one of the largest suppliers in the Optometric market and are now offering Ophthalmologists/Hospitals the opportunity to invest in their range of innovative ophthalmic instrumentation at highly competitive pricing.

Blink Medical Ltd **Stand Z**

Blink Medical will be exhibiting their range of high quality Single Use instruments standard and customised packs for cataract, VR, Oculoplastic and IVT Procedures. Come and visit our stand

BUTTERFLIES HEALTHCARE **Stand 16**

Supplements for macular degeneration from leading brand VITEYES which contain the exact AREDS2 formula. Unique combinations based on trusted independent research.

CARL ZEISS Ltd **Stand F**

ZEISS offer the complete solution for the diagnosis, treatment and management of Cataract, Refractive, Retina and Glaucoma patients. Visit the stand to discover how technology from ZEISS can transform your workflow and enhance patient care.

Carleton Optical **Stand Y**

On the Carleton stand -:New LED Slit Lamp and Operating Microscope – Takagi Seiko
New Single Use Diagnostic Lenses – Sensor Medical
Full range of lasers – IRIDEX
OCT and Fundus Cameras - CANON

D.O.R.C. International BV **Stand 13**

EVA® Phaco/Vitrectomy System. Associate® Phaco/Vitrectomy System. CryoStar®. 20-23-25-27G Transconjunctival Systems. Disposables:MicroForceps & Scissors. Backflush Instruments. Vitrectomy Lenses. Glaucolight. Liquids: VisionBlue®, MembraneBlue®, MembraneBlue-Dual®, ILM-Blue®. EFTIAR® / SIL-1000/5000®

Daybreak Medical Limited **Stand 11/12**

Daybreak Medical Limited offer the widest range of high quality lasers for Ophthalmology including PDT, 577nm Suprascan, Yag/SLT, diode and the cost effective Vitrascan multispot Scanner.

Eye News **Stand 10**

Come and visit Eye News and sign up for your free copy of the magazine. Also available will be the both the Annual Product Guide and Wallplanner

Grafton Optical Co. Ltd **Stand 4**

Grafton Optical will be launching the new range of Diagnostic Equipment from Visionix. The VX120 ‘7 in 1’ device features ‘one-touch’ operation. Other products on display are S4Optik Patient Chairs, Reichert ORA Cornea Analyser and Accutome ‘plug and play’ Ultrasound products.

Haag-Streit UK Ltd **Stand Q**

Visit Haag-Streit UK on Stand Q to see our comprehensive ophthalmic portfolio, including the; Optovue OCT range, LENSTAR biometer, MAIA microperimeter, Octopus perimeter and the latest in slit lamp imaging.

Heidelberg **Stand A**

The OCT2 module is the next generation module for the SPECTRALIS. It combines a 70 kHz A-scan rate with high-speed active “live” eye tracking, to provide unmatched image quality and significantly improved acquisition speed.

Instinctive **Stand 30/31**

Visit Instinctive for laser systems covering a wide range of applications, including: Cataract, LK, Lasik, PCO, DME and PRP. We also offer corneal cross-linking and endothelial cell counting systems.

International Glaucoma Association **Stand 7**

John Weiss & Son Ltd **Stand 38**

We will be pleased to present our renowned range of high quality micro-surgical instruments together with the latest developments in the Keraring and Coronet Corneal programmes and from MedOne.

Keeler Ltd **Stand X**

Keeler will be delighted to launch at the Royal College of Ophthalmologists it's new range of Symphony K and Q Series Slit Lamps. In addition, we shall also be showing our new D-Kat Tonometer and our leading range of Indirect Ophthalmoscopes. Volk Lenses will also be available to purchase on the stand.

Kestrel Ophthalmics Ltd **Stand I**

Leica Microsystems **Stand 25**

Medical Division partners with and supports micro-surgeons in their aim to take best care of patients, with innovative and high-quality surgical microscope technology. Visit us on Stand no. 25 or visit on the web at www.leica-microsystems.com.

Lenstec **Stand 2/3**

Lenstec; manufacturer and supplier of intraocular lenses has a solid reputation for innovation and lens accuracy, with over 20 years' experience. Premium refractive, standard IOLS, viscoelastic products and disposable knives complete the portfolio of surgical solutions.

Litechnica **Stand N**

where we will be exhibiting our latest range of laser systems and bespoke video solutions. With over 38 years in the industry, Litechnica are renowned for the highest level of service and aftercare.

M.I.S.S Ophthalmics Ltd **Stand 28/29**

Specialising in Vitreoretinal and Cataract Surgery
Distributing for Synergetics Inc, MidLabs Inc,
Alchimia srl, Kirwan Surgical Inc, Surgistar Inc, Eagle Labs Inc.

Macuvision Europe Ltd **Stand 21**

Mainline Instruments Ltd **Stand E**

Malosa Medical **Stand M**

Medisoft **Stand O**

Moorfields - Open-Eyes **Stand 8**

Moorfields Pharmaceuticals **Stand 37**

Moorfields Pharmaceuticals is the manufacturing arm of the world famous Moorfields Eye Hospital NHS Foundation Trust. Visit our expert team to find out more about the recent changes at Moorfields Pharmaceuticals regarding our unlicensed specials and how it is business as usual for our growing portfolio of innovative preservative free licensed eye drops.

Nicox UK **Stand 33**

Nicox is developing a diversified, market innovative and leading-edge ophthalmic product portfolio that addresses the current and future needs of eyecare practitioners and patients around the world.

Optos plc **Stand W**

Optos' patented ultra-widefield SLO technology acquires non-contact, central pole-to-periphery views of up to 200 degrees of the retina in one single capture, including options for color, red-free, autofluorescence and angiography

Oraya Therapuetics **Stand 15**

Premium Vision **Stand 35**

Web based Ophthalmology Software for your private practice - manage your patients from anywhere - designed by ophthalmologist for ophthalmologists - checkout www.ophthalmologysuite.co.uk and visit us on Stand 35 by the bookstall

Rayner **Stand R**

Rayner designs and manufactures intraocular lenses and proprietary injection devices for use in cataract surgery. Rayner is also the exclusive distributor of all Geuder products in England, Scotland and Wales.

The Royal College of Ophthalmologists & Nature Publishing Group **Stand RCO**

Royal National Institute for Blind People **Stand 27**

We're RNIB and we're here for everyone affected by sight loss. Our exhibition stand highlights the importance of offering practical and emotional support to patients at the time of diagnosis.

Santen **Stand 6**

Santen is the leading ophthalmic company in Japan, demonstrating commitment to ophthalmology for over 120 years. Recently launched in the UK and Ireland, we look forward to meeting you on Stand 6.

Scope Ophthalmics **Stand 5**

Scope Ophthalmics are delighted to be partnering the RCOphth again this year. We will be showcasing our expansive range of ocular surface disease management products, while providing ongoing training & support in these disease areas.

Sigmacon UK Ltd **Stand V**

Spectrum **Stand B**

Spectrum is now the exclusive UK distributor of the Nidek and Oculus ranges of diagnostic ophthalmic equipment. Combined with the launch of the new Oertli OS4 phaco and VR operating system is the Hoya MICS pre-loaded lens range. Together with the iStent and latest range of 3D microsurgical blades this puts Spectrum at the forefront for ophthalmic innovation.

Spectrum Thea Pharmaceuticals Limited **Stand U/32**

Thea Pharmaceuticals Limited are a company dedicated to Ophthalmology, with an innovative product range, covering numerous important areas relevant to ocular health including Glaucoma, Infection, Inflammation and Allergy as well as cutting edge surgical pharmaceuticals.

Stat One Services **Stand 1**

Enjoy using the VRmagic EYEsi Surgical simulators and Direct and Indirect Ophthalmoscope training simulators. Try our RETeval, Oculus BIOM®5 , Oculus Disposable BIOM® and other exciting innovations.

Tear Science **Stand 24**

TearScience® is a medical device company that pioneers breakthrough technologies to significantly improve identification, diagnosis, and treatment of Meibomian Gland Dysfunction (MGD).

Topcon (GB) Ltd **Stand C**

Topcon (GB) Ltd is pleased to be supporting the Royal College of Ophthalmologists annual conference, at the ACC in Liverpool. Topcon prides itself on bringing new technological developments to market and this year is no exception as we will be displaying a number of new products along with the very latest in OCT technology which is destined to be a game changer in OCT diagnosis.

Vision care **Stand 26**

WIN HEALTH LTD **Stand 9**

Presenting Diaton Transpalpebral Non-Corneal Tonometer for in-house and in-field IOP screening. No consumables, anaesthetics, pachymetry or calibration. Perfect, when corneal pathologies are present, contact lenses worn, after refractive surgery and keratoplasty.
E-mail: info@win-health.com / Web: www.win-health.com

RAPID FIRE

1. United Kingdom Neovascular Age-Related Macular Degeneration Database: Time to Retreatment after a Pause in Treatment. Outcomes from 92,976 Intravitreal Ranibizumab Injections

Krishnappa Madhusudhana, Aaron Lee, Pearse Keane, Usha Chakravarthy, Robert Johnston, Adnan Tufail, Martin McKibbin
UK AMD Database

Introduction: Neovascular AMD (nAMD) is a chronic disease and some patients will require retreatment after remaining treatment-free for variable period of time. There is a paucity of high-quality data regarding the likelihood of retreatment with ranibizumab in these patients. It is essential to evaluate this to plan the frequency of follow-up in such patients.

Purpose: To study the time to retreatment in eyes with nAMD which have remained treatment-free for various intervals during the maintenance phase of ranibizumab therapy.

Method: In this multicentre national nAMD database study involving 12, 951 eyes (11,135 patients) receiving 92,976 ranibizumab injections, 14 NHS centres collected up to 5 years of data, using an electronic medical record system. All patients were treated with 3 monthly injections in the loading phase, followed by pro re nata (PRN) retreatment regimen in the maintenance phase. Eyes that had a treatment-free interval of 3, 6, 9, or 12 months in the maintenance phase were identified and survival analysis was carried out.

Results: The time to retreatment for the 20th and 50th centile was 0.58/2.54 months in the 3 month, 2.07/9.62 months in the 6 month, 3.69/15.84 months in the 9 month and 5.90/22.49 months in the 12 month groups. Following a treatment-free interval of 3, 6, 9 and 12 months, 68%, 44%, 31% and 21% of eyes required retreatments after an additional 6-months of follow-up respectively. Similarly, after a further 12-months of follow-up, 77%, 56%, 43% and 34% of eyes required retreatment.

Conclusion: This study provides times to retreatment in eyes with nAMD that have been clinically stable for intervals of 3-12 months and demonstrates the likelihood of repeat therapy within the next year, even after a treatment-free interval of 12 months. These outcomes can help plan appropriate follow-up intervals for patients who have been treatment-free for intervals of up to 12 months.

2. Diagnostic accuracy In vivo confocal microscopy in detecting fungus and acanthamoeba in microbial keratitis

Jaya Chidambaram, Namperumalsamy Prajna, Srikanthi Palepu, Prajna Lalitha, Scott Hau, Minna Vesaluoma, Matthew Burton
London School of Hygiene and Tropical Medicine

Introduction: In vivo confocal microscopy (IVCM) can help early diagnosis of microbial keratitis (MK) through rapid identification of fungi and acanthamoeba. IVCM image interpretation is subjective, with grader experience increasing correct classification.

Purpose: We investigate the diagnostic accuracy of IVCM for MK in Aravind Eye Hospital, India (AEH) and inter-observer variability in grading.

Method: Consecutive patients presenting with MK (diameter ≥3mm) were recruited, examined and the corneal ulcer was scanned by IVCM (HRT3/RCM, Heidelberg Engineering). Images were graded for presence/absence of fungus or acanthamoeba by the confocalist who performed the scan and four other masked confocalists. Corneal scrapes were collected for microbiology. Sensitivity and specificity of IVCM was compared to microbiology.

Results: 254 patients were recruited (15 excluded due to inability to perform diagnostic tests). Fungus was detected in 176 (73.6%) and acanthamoeba in 17 (7.1%) by microbiology. IVCM had a pooled (5 graders) sensitivity of 85.7% (95% CI 82.2% - 88.6%) and pooled specificity of 81.6% (95% CI 76.2% - 85.9%) for fungus. For acanthamoeba, pooled sensitivity was 88.2% (95% CI 76.2% - 94.6%) and pooled specificity was 98.2% (95% CI 95.0% - 99.3%). IVCM images from ten patients were considered by all five graders to have an organism (nine fungus, one acanthamoeba) but were culture/light microscopy negative. There was high inter- and intra-observer agreement.

Conclusion: IVCM has a high sensitivity and specificity for detecting fungal filaments and acanthamoeba cysts in MK in India. There is evidence that IVCM can indicate the type of infection even when microbiology is uninformative.

3. The Application of Optical Coherence Tomography Angiography in Diabetic Retinopathy

Dawn Sim, Pearse Keane, Nicholas Koutramanos, Kulwant Sehmi, Rupesh Agarwal, Adnan Tufail, Catherine Egan
Moorfields Eye Hospital NHS Foundation Trust

Introduction: Using optical coherence tomography (OCT), it is now possible to perform rapid, non-invasive angiography of the retinal and choroidal circulations. Commercial OCT-angiography devices have recently been released (AngioVue, Optovue).

Purpose: To investigate the parafoveal vessel density in diabetic retinopathy using OCT-angiography

Method: OCT-angiography images were acquired from normal subjects and patients with diabetic retinopathy (DR) within a 3x3mm area of the central macula. The flow imaging was based on split-spectrum amplitude decorrelation angiography (SSADA), which can assess the vasculature in distinct layers of the retina. The layers assessed were the superficial retinal vascular plexus, deep retinal vascular plexus, avascular outer retina, and choriocapillaris. Parameters quantified include the area of the foveal avascular zone (FAZ) (mm2), parafoveal vessel density (%), and parafoveal vessel flow to no flow index.

Results: A total of 60 eyes were included; 30 eyes from normal subjects and 30 eyes with DR. A marked difference in parafoveal vessel density was observed between normal (49.1 ± 11.2%) and eyes with DR (36.1 ± 11.0%) (P = .0001) in the superficial retinal vascular plexus. This was also observed in the deep retinal vascular plexus (Normal: 39.6 ± 14.0% vs DR: 22.9 ± 10.0%) (P=0.001), and choriocapillaris (Normal: 86.9 ± 9.6% vs DR: 77.6 ± 13.2%) (P=0.01). The FAZ and parafoveal flow index was significantly different only in the superficial and deep retinal vascular plexi.

Conclusion: OCT-angiography has for the first time provided an insight into the characteristics of perfusion in all layers of the retina. Although the FAZ is an established parameter in determining the severity of DR, we observed that parafoveal vessel density, in the retina and choriocapillaris may be more indicative of disease.

4. A review of 145,334 patient episodes lost to follow up

Alison Davis, Alex Baldwin, Melanie Hingorani, Andy Dwyer, Declan Flanagan
Moorfields Eye Hospital

Introduction: Lost to follow up is a major problem in chronic disease management, particularly when irreversible clinical progression precedes symptoms. The NPSA Glaucoma Safety Alert in 2009 emphasised the importance of consistent robust review systems in Ophthalmology. In response to this alert Moorfields Eye Hospital reviewed the records of all patients without review appointments.

Purpose: To determine whether ophthalmic patients lost to follow up had come to harm.

Method: The health records of all patients lost to follow up between July 2007 and November 2012 were reviewed for evidence of clinical harm. This review consisted of an initial administrative review, then a clinical electronic patient record review, followed by a review of paper records by clinicians. The final stage was a clinical review based on clinical risk.

Results: 145,334 patients were identified as lost to follow up. 82,499 patient episodes were closed following administrative review. 50,519 were discharged following clinical review of the paper records. 12,316 patients required clinical review. 16 Serious incidents were identified - 14 due to glaucoma, one due to a medical retinal condition and one due to an oculoplastic condition.

Conclusion: Robust processes are required to ensure that all patients remain under appropriate review. Glaucoma patients are at the greatest clinical risk because of the initial lack of symptoms. Glaucoma services must inform patients about the importance of attending appointments and inform General Practitioners and community optometrists when patients fail to attend, to prevent irreversible harm.

5. Intractable Diplopia: A British Ophthalmological Surveillance Unit (BOSU) Study

David Newsham, Anna O'Connor, Richard Harrad
University of Liverpool

Introduction: Intractable diplopia has important quality of life implications for those affected. It is reported to be rare but little is known regarding its incidence or presentation. Previous studies have either used case reports or retrospective estimates of intractable diplopia resulting from individual ocular treatments.

Purpose: Objectives were to:

- Determine the annual incidence and causes of intractable diplopia occurring in the UK.
- Gain greater understanding of the risk factors that lead to intractable diplopia.
- Determine how cases are managed and if the treatment is successful.

Method: A prospective observational study of new cases of intractable diplopia in the UK was undertaken. Incident cases of intractable diplopia, cause and risk factors were identified via the BOSU reporting system/subsequent incident questionnaire. A follow up questionnaire determined if/how the intractable diplopia was treated and if the treatment was successful.

Results: Mean (±sd; range) age at diagnosis was 41 years (±19.8; 12 to 79). The incidence of intractable diplopia was 65 cases per year. Pre-existing manifest strabismus was present in 61% of cases. Events preceding the intractable diplopia were strabismus surgery (31%), cataract surgery (4%), Botox (2%), severe head trauma (8%), not known (16%) and other (35%) which comprised mostly of ocular trauma, vitrectomy, brain haemorrhage/cerebellar disease and max-facial surgery. Follow up revealed that treatment to eliminate the diplopia was successful in 52%, failed in 26% and 22% still had diplopia but could now ignore the image.

Conclusion: Intractable diplopia is most commonly related to previous strabismus/surgery and can be difficult to satisfactorily eradicate.

6. Retinal detachment (RD) following cataract surgery: a review of 29,468 consecutive cataract operations

Vasileios Petousis, Ahmed Sallam, Nigel Kirckpatrick, Robert Johnston
Gloucestershire Hospitals NHS Foundation Trust

Introduction: RD is the most common cause of dramatic visual loss following cataract surgery.

Purpose: The purpose of this study was to analyze the risk of RD after phacoemulsification cataract surgery in a single centre and identify risk factors.

Method: Data conforming to the RCOphth Cataract National Dataset was prospectively collected on 29,468 consecutive operations performed between 2005 – 2014. We analyzed the demographic characteristics, intraoperative complications (posterior capsule rupture, vitreous loss) and axial length using univariate and multivariate analysis. Patients were divided into 3 groups according to age (<60 years, 60-80 years, >80 years) and eyes into 3 groups according to axial length (< 23mm, 23-25 mm, >25 mm).

Results: The cumulative 7-year RD rate was 0.20%. The RD rate was significantly higher for: patients under 60 years (0.9%), male patients (0.3%), eyes longer than 25mm (0.6%) and eyes with PCR and vitreous loss (1.4%). There were no RDs amongst eyes with PCR without vitreous loss (n=124).

Conclusion: PCR with vitreous loss, younger age, male gender and longer axial length were significant factors for the development of pseudophakic RD. Standardized data collection facilitates the new finding that PCR without vitreous loss was not a risk for RD.

7. Detection and Exclusion of Retinoblastoma Gene Mosaicism

John Ross Ainsworth, Trevor Cole, Simon Ramsden, Jacqueline Allotey, Isabel Colmenero, Stuart Gillies, Carol Hitchcott
Birmingham Children's Hospital

Introduction: It is important to detect or exclude the presence of a germline mutation in every patient with retinoblastoma, as the information is key to management of the child and disease. There remains a minority of patients where gene testing is not informative. Mosaicism is an important cause of failure to clarify the presence of heterozygous retinoblastoma mutation beyond the tumour itself.

Purpose: We have developed a method for detection of retinoblastoma gene mosaicism that has extended beyond the eye. The study aims to demonstrate proof of principle for the technique.

Method: With full ethics approval and consent, optic nerve and sheath tissue samples were harvested at the time of enucleation for advanced retinoblastoma in six patients with somatic or germline gene mutations. Extracted DNA from the tissue samples was examined for the Rb gene mutation that was detected in the patient's tumour and/or blood.

Results: It was possible to extract DNA in all 12 optic nerves and sheaths, and to correctly identify or exclude the presence of a germline Rb1 mutation in all 12. This allows detection or exclusion of mosaicism beyond the eye, thanks to ocular embryology.

Conclusion: We demonstrate it is possible to detect or exclude retinoblastoma gene mutation in the optic nerve, thereby allowing the detection of mosaicism extending beyond the eye, which is critical to the risk of second cancers and recurrence of retinoblastoma in offspring.

The technique can be utilised for other eye conditions where mosaicism may occur.

8. Predicting risk of road traffic accidents in drivers with glaucoma

Andrew Tatham, Erwin Boer, Carolina Gracitelli, Peter Rosen, Linda Zangwill, Robert Weinreb, Felipe Medeiros
University of California San Diego

Introduction: Although drivers with glaucoma are at increased risk of collisions there is only weak association between road accidents and conventional tests of visual function. Better methods of risk assessment are needed.

Purpose: To examine the relationship between road collisions and two alternative functional tests (Useful Field of View (UFOV) and driving simulation) in drivers with glaucoma.

Method: A cross-sectional study of 153 drivers with glaucoma or suspect glaucoma. All subjects had tests including visual acuity, contrast sensitivity and standard automated perimetry (SAP). Ability to multitask or divide attention, which is essential for safe driving, was measured using UFOV and a driving simulator. Three-year history of collisions and average mileage per week were recorded.

Results: 18 of 153 drivers (11.8%) experienced a collision. The collision group were older, had worse binocular SAP sensitivity, worse contrast sensitivity, worse ability to divide attention (UFOV and driving simulation) and drove fewer miles. The driving simulator was the best discriminator of accidents (AUC 0.80 versus 0.69-SAP and 0.59-UFOV). Longer reaction times to driving simulator tasks provided additional value compared to SAP and UFOV, with a 1 standard deviation increase in reaction time (approximately 0.75s) associated with 2-fold increased odds of collision.

Conclusion: Measures of ability to divide attention during simulated driving were more strongly associated with collisions than UFOV or conventional measures of visual function. Predictive models that account for the ability to divided attention may provide a means to improve risk assessment in drivers with glaucoma and reduce the impact of disease on quality of life.

9. The risk of cystoid macular oedema after complicated cataract surgery

Charlotte Buscombe, Colin Chu, Quresh Mohamed, Robert Johnston, Ahmed Sallam
Cheltenham General Hospital

Introduction: Cystoid macular oedema (CMO) is an important cause of visual decline after cataract surgery, but to date there has been no large UK study of incidence or the effect of surgical complications.

Purpose: To determine the incidence of CMO following cataract extraction and the relative risk (RR) of intraoperative complications.

Method: The RCOphth Cataract National Dataset was prospectively collected within an electronic medical record system (Medisoft). Data collection included additional procedures performed intra-operatively and compulsory reporting of operative and post-operative complications. All patients were prescribed four weeks of reducing topical steroid and had post-operative follow-up appointments within an average of five weeks. A new diagnosis of CMO within 90 days of surgery was the primary outcome.

Results: Data was reviewed from 34,225 consecutive cataract operations, performed between 2005 and 2014. Patients with pre-existing CMO, diabetes, uveitis, vein occlusion or receiving perioperative NSAIDs were excluded. The baseline incidence of CMO was 0.71% for patients with no pre-operative risk factors, or operative complications. Patients with 'small pupil' documented operatively had a RR of 2.05 (95% CI, 1.01-4.16). If iris trauma or prolapse occurred the RR was 3.29 (95% CI, 1.06-10.17). Following posterior capsule rupture and vitreous loss the RR was 5.16 (95% CI, 2.75-9.69).

Conclusion: This is the largest UK study reporting the baseline incidence of CMO and the relative risk after complicated cataract extraction. It provides a benchmark incidence and evidence for considering additional prophylactic treatment, such as topical NSAIDs, in patients with surgical complications.

10. Intravitreal Aflibercept for the Treatment of Patients With Diabetic Macular Edema: 100-Week Outcomes From the VIVID-DME and VISTA-DME Trials

Mariacristina Parravano, Monica Varano
Multicentre

Introduction: The VIVID-DME and VISTA-DME clinical trials evaluated efficacy and safety of intravitreal aflibercept (IVT-AFL) versus macular laser photocoagulation in patients with diabetic macular edema.

Purpose: The current analysis describes 100-week results.

Method: Patients (N = 872) were randomised to IVT-AFL 2 mg every 4 weeks (2q4) plus sham laser, IVT-AFL 2 mg every 8 weeks (2q8) (after 5 initial monthly doses) plus sham laser, or laser plus sham injections. Primary endpoint was mean change in best-correct visual acuity (BCVA) to Week 52.

Results: Mean BCVA gains to Week 100 in the 2q4, 2q8, laser groups were +11.4, +9.4, +0.7 letters (VIVID-DME), and +11.5, +11.1, +0.9 letters (VISTA-DME), respectively. Mean changes in central retinal thickness to Week 100 in the 2q4, 2q8, laser groups were –212, –196, –86 µm (VIVID-DME), and –191, –191, –84 µm (VISTA-DME), respectively. Proportion of patients with ≥2-step improvement in ETDRS Diabetic Retinopathy Severity Score to Week 100 for the 2q4, 2q8, laser groups was 29.3%, 32.6%, 8.2% (VIVID-DME), and 39.6%, 39.7%, 17.0% (VISTA-DME). The most frequent ocular adverse event (AE) in the IVT-AFL groups in both studies was conjunctival haemorrhage (VIVID-DME = 24.4–26.5%; VISTA-DME = 31.6–40.6%).

Conclusion: In VIVID-DME and VISTA-DME, IVT-AFL continued to demonstrate superiority in visual and anatomic endpoints over laser through Week 100, with similar efficacy in 2q4 and 2q8 groups. IVT-AFL was generally well tolerated, with no overall difference between treatment groups in the incidence of AEs.

11. BOSU Survey of Endogenous Endophthalmitis within the British Isles

Sarah Maling, Nigel Davies
Chelsea and Westminster Hospital

Introduction: Endogenous endophthalmitis is rare and may cause significant visual morbidity. Epidemiological data will help characterise the condition and guide optimal management.

Purpose: To determine incidence, underlying aetiology, eye findings, management and final outcomes in endogenous endophthalmitis over a 12 month period

Method: Cases were identified through the BOSU reporting system using postal questionnaire with follow up at 6 months.

Results: 62 cases reported with 47 questionnaires returned to date. The age range was 2 to 84 years (mean 58). At presentation 60% had vision loss, 51% a red eye, 28% had pain. Visual acuity was poor, with mean of 2.1 logMAR units. 75% had anterior chamber cells and 29% hypopyon. Vitritis was present in 78% of patients and in 40% there was no fundal view. In 25% retinal or choroidal lesions were seen. 46% had an underlying systemic condition predisposing to infection and 57% had active primary infection at presentation.

58% had positive blood culture and 23% had positive vitreous biopsy. A wide range of organisms was found with streptococcal species being the most common (35% of cases) followed by staphylococcus aureus (34%). 68% were treated with intravitreal antibiotics in combination with intravenous antibiotics in 60%.

Conclusion: The survey demonstrates the severe nature of endogenous endophthalmitis in patients with active infection or with risk factors for infection. The presenting findings and treatments are identified in this study and outcome data will show efficacy of treatment when all data are collected.

12. Molecular basis and phenotype-genotype correlations in a large UK cohort of Leber Congenital Amaurosis

Sarah Hull, Robert Henderson, Arun Dev Borman, Philip Moradi, Andrew Webster, Michel Michaelides, Anthony Moore
Moorfields Eye Hospital & Great Ormond Street Hospital

Introduction: Leber Congenital Amaurosis (LCA) is characterised by poor vision and nystagmus from early infancy associated with an absent/markedly reduced electroretinogram (ERG). It is geneticially heterogenouus and some causative genes are associated with distinctive clinical features. Early molecular diagnosis facilitates genetic counselling,including information about prognosis and is an essential prerequisite for gene-specific interventions.

Purpose: To investigate a series of 140 probands with LCA to determine clinical and molecular characteristics and relationships.

Method: Consecutive patients from two tertiary referral centres with a clinical diagnosis of LCA underwent in depth phenotyping. Molecular investigations included candidate gene Sanger sequencing, arrayed primer extension, next generation sequencing, or whole exome-analysis.

Results: All patients presented at birth/infancy with nystagmus and had markedly reduced/absent full-field ERGs. Likely disease-causing variants were identified in 13 genes; with 67% of patients molecularly solved (91/141). The 5 most frequent causative genes were CEP290 (27%, n=25), CRB1 (15%, n=14), GUCY2D (13%, n=12), RPE65 (7%, n=7) and NMNAT1 (7%, n=7). Phenotype-genotype correlations that were identified included photoattraction, peripheral fine white retinal dots, and absent/markedly reduced autofluorescence in RPE65 disease; nummular retinal pigmentation with macular thickening and loss of lamination in CRB1; and relatively normal fundus appearances in both CEP290 and GUCY2D associated disease.

Conclusion: The 5 most frequent molecular causes of LCA in this large UK cohort account for 69% of the genetically characterised cases. Recognising key clinical features can help to target molecular investigation.

Symphony by Keeler

Beautifully Crafted Q series Digital Slit Lamps

In the light of shrinking budgets, the beautifully crafted Keeler Symphony Q and K series Slit Lamps are a cost effective alternative to other Slit Lamps, without compromising quality and innovation.

"The Slit Lamp has outstanding optics and represents excellent value for money - highly recommended"

Mr Eric Ezra
Director of Vitreoretinal Surgery,
Moorfields Eye Hospital

K series Slit Lamps

For further details please email Laura Haverley on laurah@keeler.co.uk or complete the form online at www.keeler-symphony.com/contact

Keeler

Stand X

www.keeler-symphony.com

FOR THE REDUCTION OF ELEVATED INTRAOCULAR PRESSURE IN PATIENTS WITH OPEN ANGLE GLAUCOMA AND OCULAR HYPERTENSION

Monopost®

Latanoprost 50 micrograms/ml eye drops solution in single-dose container

VISIT US AT STAND U

FIRST LINE

FOR ALL POAG AND OHT PATIENTS

- Non inferior IOP control to Xalatan® with significantly lower hyperaemia[1]
- Up to 51% less expensive than other branded prostaglandins[2]

Monopost® latanoprost 50 micrograms/ml eye drops solution in single-dose container. Prescribing Information: Please refer to Summary of Product Characteristics (SmPC) before prescribing. Presentation: Box of 6 sachets (30 pack) each containing 5 single-dose containers (LDPE) containing 0.2 ml of eye drops. 1 ml eye drops solution contains 50 micrograms of latanoprost and 50 mg of macrogolglycerol hydroxystearate 40 (castor oil polyoxyl hydrogenated). Indication: Reduction of elevated intraocular pressure in patients with open angle glaucoma and ocular hypertension. **Posology and Method of Administration:** Adults (including the elderly): One drop in the affected eye(s) once daily in the evening. Do not exceed this dose. Use immediately after opening the single-dose container and discard any remaining contents after use. Remove contact lenses before instillation of the drops and reinsert after 15 minutes. To reduce possible systemic absorption, perform punctal occlusion for one minute immediately after instilling each drop. Paediatric population: No data are available. **Contra-indications:** Known hypersensitivity to any ingredient. **Warnings and Precautions:** Latanoprost may gradually change eye colour by increasing the amount of brown pigment in the iris and this may be permanent. Unilateral treatment can result in permanent heterochromia. Change in eye colour has predominantly been seen in patients with mixed coloured irides, is usually within the first 8 months of treatment, rarely during the second or third year, and has not been seen after the fourth year of treatment. The rate of progression of iris pigmentation decreases with time and is stable for five years. The effect of increased pigmentation beyond five years has not been evaluated. No further increase in brown iris pigment has been observed after discontinuation of treatment. Iris pigmentation is not associated with any negative clinical sequelae. However, regular monitoring is advised and treatment discontinued if appropriate. Exercise caution in patients with asthma as some cases of exacerbation of asthma and/or dyspnoea have been reported. Use with caution in patients with a history of herpetic keratitis, and avoid in cases of active herpes simplex keratitis and in patients with history of recurrent herpetic keratitis specifically associated with prostaglandin analogues. Caution should also be used for chronic angle closure glaucoma, open angle glaucoma of pseudophakic patients, pigmentary glaucoma, inflammatory and neovascular glaucoma, inflammatory ocular conditions, congenital glaucoma, aphakic patients, pseudophakic patients with torn posterior lens capsule or anterior chamber lenses, patients with known risk factors for cystoid macular oedema, or during the peri-operative period of cataract surgery. In patients with known predisposing risk factors for iritis/uveitis, latanoprost can be used with caution. Periorbital skin discolouration has been observed mainly in Japanese patients. This is not permanent and may reverse while continuing treatment. Eyelashes and vellus hair in the treated eye and surrounding areas may change by increasing length, thickness, pigmentation, number of lashes or hairs and misdirected growth of eyelashes. Eyelash changes are reversible upon discontinuation of treatment. MONOPOST contains macrogolglycerol hydroxystearate (castor oil polyoxyl hydrogenated) which may cause skin reactions. No long-term safety data are currently available on this excipient. **Pregnancy:** Do not use MONOPOST during pregnancy. **Lactation:** Do not use or stop breast feeding. **Fertility:** No effect on fertility from latanoprost in animal studies. **Driving and Using Machines:** In common with other eye preparations, instillation of eye drops may cause transient blurring of vision. Until this has resolved, patients should not drive or use machines. **Interactions:** Paradoxical elevations in intraocular pressure have been reported following ophthalmic administration of two prostaglandin analogues. Therefore, the use of two or more prostaglandins, including analogues or derivatives, is not recommended. **Undesirable Effects:** The majority of adverse events relate to the ocular system. Most ocular adverse events are generally transient and occur on dose administration. The adverse events and their frequencies listed herebelow are those described for the reference product. Adverse events are categorised as: very common (≥ 1/10), common (≥ 1/100 to < 1/10), uncommon (≥ 1/1,000 to < 1/100), rare (≥ 1/10,0000 to < 1/1,000) and very rare (< 1/10,000), Not known (cannot be estimated). Infections and Infestations: *Not known:* Herpetic keratitis. Eye Disorders: *Very common:* Increased iris pigmentation; mild to moderate conjunctival hyperaemia; eye irritation (burning, grittiness, itching, stinging, foreign body sensation); eyelash and vellus hair changes (increased length, thickness, pigmentation and number, mainly in Japanese). *Common:* transient punctate epithelial erosions, mostly without symptoms; blepharitis; eye pain. *Uncommon:* Eyelid oedema; dry eye; keratitis; vision blurred; conjunctivitis. *Rare:* Iritis/uveitis; macular oedema; symptomatic corneal oedema and erosions; periorbital oedema; misdirected eyelashes sometimes with eye irritation; extra row of cilia at the aperture of the meibomian glands (distichiasis), photophobia. *Very rare:* Periorbital and lid changes resulting in deepening of the eyelid sulcus. *Not known:* iris cyst. Nervous System Disorders: *Not known:* Headache, Dizziness. Cardiac Disorders: *Very rare:* Aggravation of pre-existing angina. *Not known:* Palpitations. Respiratory, Thoracic and Mediastinal Disorders: *Rare:* Asthma, asthma exacerbation and dyspnoea. Skin and Subcutaneous Tissue Disorders: *Uncommon:* Skin rash. *Rare:* Localised skin reaction on the eyelids; darkening of the palpebral skin of the eyelids. Musculoskeletal and Connective Tissue Disorders: *Not known:* Myalgia; Arthralgia. General Disorders and Administration Site Conditions: *Very rare:* Chest pain. Report any suspected adverse reactions via www.mhra.gov.uk/yellowcard **Overdose:** Apart from ocular irritation and conjunctival hyperaemia, no other ocular side effects are known if MONOPOST is overdosed. Treatment should be symptomatic. **Storage:** Store below 25°C. After first opening of the sachet: use the single-dose containers within 7 days. After first opening of the single-dose container: use immediately. **Legal Category:** POM. **Basic NHS Price:** £8.49 for 30 pack, £25.47 for 90 pack. **PL Number:** PL 20162/0015. **PL Holder:** LABORATOIRES THEA, 12 RUE LOUIS BLERIOT, 63017 CLERMONT-FERRAND CEDEX 2, France. **Date of Preparation: 9/10/2014**

Thea Pharmaceuticals Limited • MED IC3 • Keele University Science & Business Park • Keele • Newcastle Under Lyme • ST5 5NP
Head Office: **0845 521 1290** • Medical Information: **0870 192 3283** • E-Mail: theasupport@theapharma.co.uk • **www.theapharmaceuticals.co.uk**

Adverse events should be reported. Reporting forms and information can be found at www.mhra.gov.uk/yellowcard.
Adverse events should also be reported to Thea Pharmaceuticals 0870 192 3283

1 = Rouland J-F, Traverso CE, Stalmans I, et al. Br. J. Ophthalmol. (2013); 97: 196-200 2. BNF online (http://www.bnf.org/bnf/index.htm) accessed on 25/11/2014

MONO0002 NOV2014

13. Clinical outcomes in the UK for 5075 patients with neovascular age-related macular degeneration (nAMD) treated with ranibizumab for one year: LUMINOUS UK second interim analysis results

Christopher Brand, Geeta Menon, Shahrnaz Izadi, Sue Lacey
Total 49 UK sites. Mr Brand's site is the Royal Hallamshire

Introduction: The LUMINOUS prospective program is a 5year, multicenter, global, observational study initiated to describe the long-term safety, effectiveness, and treatment patterns with ranibizumab 0.5mg, across all treatment indications in a broad patient population in routine clinical practice.

Purpose: The second interim analysis was undertaken in March 2014 and describes safety and efficacy outcomes for 5075 UK patients with nAMD who completed were recruited prior to March 2013. Here we present the efficacy outcomes only.

Method: Out of a total of 9125 global patients with nAMD recruited prior to March 2013, 5075 (55%) were from the UK. Patients are described according to whether they were treatment naïve (TN) or had received prior treatment with ranibizumab (PT). The UK data are described in the context of the overall global dataset for patients with nAMD. Data are shown as mean±SD in the primary treated eye unless otherwise indicated.

Results: The demographics of the UK population were comparable to those for the global dataset. TN UK patients demonstrated a slightly shorter time to diagnosis versus global (median 0.03 vs 0.04 years). Baseline visual acuity (VA) in UK patients was lower in TN compared to PT patients (56.6±15.24 vs 58.1±17.31 letters). However, TN patients in the UK had higher baseline VA compared to global patients (56.6±15.24 vs 51.6±19.65 letters). At 12 months in the UK, VA in TN was higher than at Baseline (60.2±18.20 letters). BCVA was stable in the PT group (57.3±18.63 letters). Similar observations were evident in the global dataset. By 12 months, TN and PT patients in the UK received 4.7±2.4 and 3.4±2.81 injections respectively.

Conclusion: LUMINOUS includes patients with more diverse demographics than in the pivotal trials and therefore efficacy outcomes from this study are more representative of real world experiences of patients with nAMD.

14. Diabetic Retinopathy Prevention Programmes in Five VISION 2020 LINK Institutions in Sub-Saharan Africa

Sophie Poore, Marcia Zondervan, Karl Blanchet, Allen Foster
London School of Hygiene and Tropical Medicine

Introduction: Diabetes is emerging as an important non-communicable disease in sub-Saharan Africa (SSA). Sight loss from diabetic retinopathy (DR) can be prevented with screening and early treatment. DR prevention programmes are emerging in SSA and in order to use limited resources optimally, an informed approach to planning and service delivery is required.

Purpose: (1) To outline the required actions and considerations in planning and developing DR prevention services in SSA.

(2) To provide evidence on the enabling and constraining factors in the implementation of DR prevention services in SSA.

Method: Multiple-case study approach was used to analyse five DR prevention services in Botswana, Ghana, Tanzania and Zambia. Data was collected using a mixed-method approach including: literature review and semi-structured interviews. The WHO Health Systems Framework was adopted as the analytical framework.

Results: Systematic planning of DR prevention programmes required collaboration with numerous ministerial departments and professional bodies. Constraints to service delivery were predominantly faced at points of flows of information and movement of patients, including: inviting patients to screening, transferring images between photographer and graders, notifying patients of the test outcome, and patient uptake of treatment services. Strong integration between the diabetes and ophthalmology departments was a significant enabling feature.

Conclusion: Supportive activities at the policy-making level that address all elements of the health system are essential for the development of sustainable, integrated and systematic services. Service delivery should be organised so as to both reduce multiple appointments for the patient, and to reduce the programme's administrative burden.

15. The Royal College of Ophthalmologists' National Ophthalmology Database Study of Cataract Surgery: Visual Outcomes and Complications

Alex Day, Paul Donachie, John Sparrow, Robert Johnston
UCL Institute of Ophthalmology and Moorfields Eye Hospital

Introduction: The Royal College of Ophthalmologists' National Ophthalmology Database (RCOphth NOD) was established to provide national audit and research data; and an evidence base for revalidation standards.

Purpose: To describe the outcomes of cataract surgery in the United Kingdom.

Method: Anonymised data on 180,114 eyes from 127,685 patients undergoing cataract surgery between 08/2006 and 11/2010 were collected prospectively from 27 sites. Outcome measures included intraoperative and postoperative complication rates, preoperative and postoperative visual acuities.

Results: Median age at first eye surgery was 77.1 years old and 41.0% patients underwent cataract surgery on both eyes.

The median preoperative VA was 0.50 logMAR (IQR: 0.30 - 0.80). The median postoperative best-measured visual acuity was 0.10 logMAR (IQR: 0.00 - 0.20).

Overall 4.2% (95% CI: 4.1% to 4.3%) cases had an intraoperative complication, the most common being posterior capsule rupture and/ or vitreous loss (PCR, 1.95%, 95% CI: 1.89% to 2.02%).

Visual loss of 0.3 logMAR or more occurred in 2.3% eyes. A higher proportion of eyes with any intra-operative complication or PCR had visual loss (both $p<0.001$).

PCR was associated with a 42 times higher risk of retinal detachment surgery within 3 months and an 8 times higher risk of endophthalmitis (both $p=0.000$).

Conclusion: These results provide updated data for the benchmarking of cataract surgery. Visual outcomes, and the rate of PCR appear stable over the past decade.

16. Are the Driver and Vehicle Licensing Agency (DVLA) recommendations following amaurosis fugax justified? A review of the evidence and NHS consultant ophthalmologist opinion in the UK

Paul Steptoe, Jeremy Butcher
Countess of Chester Hospital

Introduction: The DVLA advise patients with symptoms of amaurosis fugax/transient monocular visual loss (TMVL) or transient ischaemic attack (TIA) to refrain from driving for four weeks (group 1 licence holder, car, motorcycle) or recommend refusing or revoking a licence for one year (group 2 licence, lorries, buses). They make no reference to investigation, outcomes or aetiology

Purpose: To review the risk of stroke following TMVL.

To establish the opinion amongst consultant ophthalmologists regarding this advice.

Method: Literature review and an anonymous survey to NHS consultant ophthalmologists in the UK.

Results: The risk of stroke in the 90 days following TIA is 10%-15%, half of which occur within 2 days. Of the 9 studies reviewed, only one performed sub-analysis on patients with a purely ocular event (n=33), none of whom had a stroke within 30 days vs 14.3% who had cerebral TIAs (n= 176). The 3 year risk of ipsilateral stroke is 10% following TMVL vs 20% following hemispheric TIA.

80% of consultant ophthalmologists (n=40) were unaware of such advice from the DVLA. 82.5% did not inform their patients following an episode of TMVL they shouldn't drive for 4 weeks. 70% felt the advice was inappropriate.

Conclusion: Given the lack of evidence of increased risk of stroke following TMVL a 4 week driving ban may not be warranted.

17. Evaluation of Visual Gains in Patients With Choroidal Neovascularisation Secondary to Pathological Myopia in the MYRROR Study

Francesco Bandello
University Vita-Salute

Introduction: Choroidal neovascularisation is a frequent cause of central vision loss in patients with pathological myopia.

Purpose: To evaluate the proportion of patients with myopic choroidal neovascularisation achieving visual gains following intravitreal aflibercept (IVT-AFL) injection.

Method: Post hoc analysis of the MYRROR study; 121 patients were randomised 3:1 to IVT-AFL (n=90) or sham/IVT-AFL (n=31; patients received sham to Week 20 [W20] and IVT-AFL from W24 to W48).

Results: At W24, 63.3% and 38.9% of IVT-AFL patients and 12.9% and 9.7% of sham/IVT-AFL patients had gained ≥10 or ≥15 letters from baseline, respectively. By W48, 68.9% and 50.0% of IVT-AFL patients and 41.9% and 29.0% of sham/IVT-AFL patients (24 weeks after IVT-AFL initiation) had gained ≥10 or ≥15 letters, respectively. The most common ocular adverse events (AE) in the study eye were conjunctival haemorrhage (11%) in the IVT-AFL group and punctate keratitis (12.9%) in the sham/IVT-AFL group. Seven (5.7%) patients had a serious AE (all IVT-AFL; only 1 serious AE in study eye [macular hole]).

Conclusion: The proportion of IVT-AFL patients gaining ≥10 or ≥15 letters by W24 was well maintained and even slightly increased at W48. Clinically meaningful benefits were also observed at W48 in the sham/IVT-AFL group albeit in fewer patients. Overall the incidence of AEs was consistent with the known safety profile of IVT-AFL. Based on these findings, earlier IVT-AFL treatment is recommended with re-injection only if disease persists or reoccurs.

18. Anterior segment optical coherence tomography in pigment dispersion syndrome: a case-control study

Ameet Shah, Gerassimos Lascaratos, Angelos Sinapis, Dimitrios Sinapis, David Garway-Heath
Moorfields Eye Hospital NHS Foundation Trust

Introduction: Iris concavity is thought to play an important role in the pathogenesis of pigment dispersion syndrome (PDS) and pigmentary glaucoma (PG). Anterior segment optical coherence tomography (AS-OCT) was used to assess biometric parameters in PDS/PG and control eyes in order to better understand disease pathogenesis.

Purpose: To identify anterior segment parameters that best differentiate between PDS/PG and matched controls.

Method: 50 eyes with PDS/PG and 50 age-, sex- and refraction-matched control eyes were imaged using Visante AS-OCT (Carl Zeiss Meditec, Dublin, CA) along the horizontal meridian. Scans were performed with and without accommodation to an internal fixation target. Anterior chamber angle and depth, iris curvature, scleral spur to iris root distance, lens vault, angle opening distance and trabecular-iris space area were measured. Receiver operating characteristic (ROC) curves were constructed for each parameter. The relationship between age and iris curvature was investigated.

Results: All parameters were significantly different between PDS/PG cases and controls. Non-accommodating iris curvature had the largest area under the ROC curve = 0.82 [95% confidence interval (CI) 0.73-0.89, P = 0.0001] with a cut-off ≤ 0.1 mm. Significant association was observed between age and iris curvature in PDS/PG cases (r-squared = 0.25-0.44, P < 0.001) but not in controls.

Conclusion: Iris curvature in the non-accommodative state was the best performing AS-OCT parameter at distinguishing PDS/PG subjects from controls. This parameter may be the key anatomical feature in the pathogenesis of PDS/PG.

19. Surgical Trabeculectomy Training – Are we safe at supervising?

Andrew Walkden, Martyn Senior, Samuel Naylor, Hayun Lee, Nitin Anand, Anna Bhargava
Royal Preston Hospital

Introduction: Surgical exposure for trainees is limited due to service provision demands, the European working time directive and subspecialisation of glaucoma surgery. Limited knowledge exists on the outcomes of supervised glaucoma surgery.

Purpose: The aim is to determine the safety of supervised trabeculectomy surgery performed by trainee ophthalmologists.

Method: Retrospective case note review of all eyes (n=166) that underwent trabeculectomy surgery with MMC by consultant and trainee surgeons between March 2011 and November 2013 across two UK centres. All eyes have 1-year follow-up. Data collection includes pre-operative IOP, IOP at 1 year, and snellen visual acuities. Failure rates and surgical complications were recorded. Two-tailed p-values were obtained using Fisher's exact test to ascertain statistical significance between groups.

Results: 72 (48%) cases were performed by consultant ophthalmologists (mean age=67; range 44-89 years). Trainees performed: 78 (52%) cases mean age= 70; 37-89 range years). No statistical significance was observed between consultant and trainee eyes achieving IOP <21mmHg and <16mmHg (p=0.31 and 0.75 respectively). No statistical significance was observed between the two groups in terms of snellen acuity loss (p=0.37). No statistical significance was seen between consultant failure rate (n=20) and supervised trainee failure rate (n=27) (p=0.38) or complication rate (p=0.45).

Conclusion: Supervised trainee cases did not show higher complication rates than consultant cases. These findings help guide informed consent if a trainee is to perform surgery. The findings may encourage trainee participation in more glaucoma surgery therefore increasing experience and enhancing training.

20. Headache Determines Quality of Life in Idiopathic Intracranial Hypertension

Yasmeen Mulla, Keira Markey, Rebecca Woolley, Smitaa Patel, Susan Mollan, Alexandra Sinclair
University of Birmingham

Introduction: There is a paucity of data on quality of life (QOL) in idiopathic intracranial hypertension (IIH).

Purpose: To compare QOL in IIH to the normal UK population. To investigate QOL changes with treatment of IIH, using a weight loss intervention, and determine which clinical factors influence QOL.

Method: A UK, multi-centre, prospective cohort, double-crossover study. Baseline QOL (measured with 36-Item Short Form Health Survey) in IIH (n=24) was compared to an age and gender matched UK population (n=3338). QOL changes examined at baseline, 3 months and 6 months, analysed by paired t-tests and correlated with BMI, intracranial pressure (ICP), papilloedema (OCT measure of retinal nerve fibre layer), LogMAR visual acuity, perimetric mean deviation (Humphrey 24-2) and headache severity (six-item headache impact test (HIT-6) and diary evaluation), analysed with Pearson's coefficient.

Results: At baseline, QOL domains were significantly lower in IIH compared to UK normative population, $p<0.001$. Weight loss led to a significant improvement in 10 out of 11 QOL domains in conjunction significant improvement in acuity, perimetry, papilloedema and headache severity, $p<0.001$. Improving QOL domains correlated significantly with headache recovery, $p<0.001$.

Conclusion: QOL is significantly reduced in IIH patients. QOL improved with weight loss alongside significant improvement in vision, perimetry, papilloedema, ICP and headache. Interestingly, headache was the only clinical outcome that correlated with enhanced QOL. Therefore, active headache management is recommended alongside visual monitoring in IIH.

AUDIT & CLINICAL GOVERNANCE

21. An audit measuring the 3 year outcome of ranibizumab for wet AMD in a district general hospital

Adnaan Haq, Prabhu Tonne, Maharatnam Logendra, Gopinath Reddy
Northampton General Hospital

Introduction: Ranibizumab has been used as a treatment for AMD since 2008. There have been trials/studies looking at the efficacy of ranibizumab over a 2 year period, however, few have measured the efficacy over a 3 year period.

Purpose: To compare the practices carried out at a district general hospital for wet AMD with national/international data. To measure the outcome of these practices by comparing LogM at 6, 12, 24 and 36 months at the hospital

Method: A retrospective audit was carried out from 50 patient notes. Patients are seen by a consultant on a strictly monthly basis and have OCT imaging. If there is stablisation of disease, patients can be discharged to the ´stable clinic´, a nurse led clinic. 6, 12, 24 and 36 months LogM were collected as well as number of injections given yearly. We compared out data with the national AMD database, the Horizon trial and other published data.

Results: Average LogM increased by 4.14 letters over the 3 year period, better than the national database and similar to the Horizon trial. Average numbers of injections at yearly intervals were lower than national/international data.

Conclusion: Having monthly OCT imaging and consultant follow up has proven to be an excellent method of ensuring stabilisation of disease. Strict follow up and regular consultant led clinics can not only help stabilise disease, but also reduce costs and clinic pressure once patients are discharged into nurse led clinics.

22. Importance of a clinical placement in ophthalmology in the undergraduate medical curriculum

Taras Gout, David Gaunt, Sarah Maling
Watford General Hospital

Introduction: Clinical placements in ophthalmology are no longer necessary in the UK undergraduate medical curriculum. However, junior doctors are still expected to have the knowledge and clinical skills to manage basic ophthalmic presentations.

Purpose: We report an analysis of ophthalmic presentations in the emergency department, commonly staffed by junior doctors, in order to demonstrate the importance of undergraduate ophthalmology teaching.

Method: This study assessed ophthalmic presentations at a large District General Hospital Emergency Department in Hertfordshire from 1st February to 28th February 2014. Presenting complaint was screened for ophthalmic related cases with inclusion criteria based on Royal College of Ophthalmologists documents on undergraduate training.

Results: 7.4% (486/6354) presentations had an ophthalmic component. Top three categories of head injury, non-specified eye problems and headaches accounted for 65% (318/486) of cases. Stroke and TIA accounted for 15% (73/486) of cases. The remainder included a spectrum of core ophthalmological complaints including red eye, painful eye and flashing lights.

Conclusion: Ophthalmic presentations are common in the Emergency Department, which is commonly staffed by junior doctors. Presentations such as stroke may have sight and life threatening complications. A clinical placement in ophthalmology at medical school would provide the necessary clinical experience to complement the core knowledge required to safely manage these patients.

23. Community optometrist's referrals to secondary Urgency Clinic: Appropriateness and accuracy

Matthew Jinkinson, Trevor Warburton, Paul S Cannon
Stepping Hill Hospital

Introduction: A local CCG commissioned a primary care Minor Eye Conditions Service (MECS) in April 2013 from a group of 28 optometrists within the CCG region.

Purpose: The aims of this audit were to assess the appropriateness of referrals made by MECS to the local Urgency Clinic, the correlation of diagnostic accuracy between the optometrists and an ophthalmologist and to highlight areas of improving the service provided.

Method: A retrospective audit of referrals over a 4-month period was undertaken. The appropriateness of the condition identified at the optometrist's consultation was assessed initially by a round table discussion of 4 optometrists and 1 ophthalmologist and finally correlated with the ophthalmologist diagnosis, i.e. even though optometrist diagnosis may be incorrect was referral to the Urgency Clinic appropriate. The ophthalmologist had access to the Urgency Clinic case notes to assess the diagnosis made in the clinic for accuracy assessment. The MECS service uses an IT management system making data readily available.

Results: During the time period, 1026 patients attended MECS, of which 98 were referred to the Urgency Clinic. 13.27% (13 urgent referrals) were deemed inappropriate based on optometrist's diagnosis and should have been managed within the MECS service. 77 (79%) patients attended Urgency Clinic, 53 (68.8%) diagnoses correlated with the ophthalmologist diagnosis. 54 (70.1%) referrals were appropriate for secondary management (regardless of optometrist diagnosis).

Conclusion: The MECS is reducing referrals to the local ophthalmic centre, with acceptable appropriate and accurate referrals. Certain conditions require further training to enable more accurate diagnosis by optometrists.

24. Ophthalmology referral and prevalence of detected eye pathology in patients with sarcoidosis attending a secondary care department of respiratory medicine

Chin Pey Yap
Lincoln County Hospital

Introduction: Although sarcoidosis is best known for its thoracic involvement, extra-pulmonary involvement, such as ocular sarcoidosis can cause complications and significant morbidity. Therefore, routine referral to the ophthalmologists for careful slit-lamp examination and identification of early ocular changes is advocated.

Purpose: We aim to assess the proportion of patients referred to the ophthalmology department and the prevalence of eye pathology in these patients.

Method: Retrospective cohort study involving patients with a diagnosis of sarcoidosis attending the Norfolk and Norwich University Hospital NHS Trust between January 2012 and June 2013.

Results: 443 patients were included in this study, of which 15 patients were referred from the ophthalmologists following the diagnosis of ocular sarcoidosis. Only 26.9% were referred to the ophthalmologists. 6% were routinely referred at the time of diagnosis and 81% had evidence of eye pathology. The commonest manifestation of the eye pathology was uveitis (47%). 9% asymptomatic patients who were referred at a later time after the diagnosis of sarcoidosis were found to have eye pathology after ophthalmologists review.

Conclusion: We found that there is a high prevalence of ocular pathology among the referral group. The possibility of eye disease is not known in those who are not referred to the ophthalmologists.

We suggest that patients with sarcoidosis should be routinely referred to the ophthalmologists. Previous research has found that routine referral for slit lamp examination can detect ocular pathology in sarcoidosis patients before symptoms present while treatment is more effective than for later detection.

25. Venous-Thrombo embolic disease post Ophthalmology Daycase Surgery. Is routine thrombo-prophylaxis required?

Ryan Davies, Christopher Williams, Rachel Rayment
University Hospital of Wales, Cardiff

Introduction: Venous thrombo-embolic disease accounts for a substantial number of hospital admissions and deaths annually. These are potentially avoidable and as such NICE guidance requires risk assessment of day surgery patients. Evidence is sparse with regards to the incidence of DVT or PE following eye surgery. A number of Trusts identify eye surgery as a contra-indication to pharmacological prophylaxis.

Purpose: Our aim is to determine the incidence of venous clots following ophthalmic day case surgery at the University Hospital of Wales, Cardiff. Should we be prescribing routine thrombo-prophylaxis?

Method: We Identified patients that had USS Doppler or CTPA confirmed DVT or PE over a 4 year period. These were matched with patients that had an admission under ophthalmology in the preceding 90 days.

Results: Results taken from April 2010 to December 2013. 15,236 patients attended for daycase procedures during this time, including overnight stays for Vitreo-retinal surgery. We identified 12 patients, totalling 11 DVT's and 2 PE's within 90 days of eye surgery. There were no cases within the immediate 7 post operative days. All patients had confounding risk factors and none were attributed to their day case surgery.

Conclusion: There is no evidence to suggest day case surgery puts patients at risk of VTE disease. It is possible to therefore avoid the unnecessary cost of prophylaxis and the risk of unwanted bleeding associated with pharmacological intervention.

26. A review of the quality of clinical letters: is there a difference between electronic patient record generated (ePR) and conventional dictation

Anjali Gupta, Jonathan Finnity, Saaeha Rauz
Birmingham and Midland Eye Centre

Introduction: Clinic letters provide healthcare professionals with information regarding a patient's diagnosis and management. Under the NHS Plan, all letters must be copied to the patient. Letters should be coherent, in plain English with minimal use of acronyms. Trust policies indicate a maximum of 5 days turnaround from the clinic date to ensure contemporaneous information is supplied to the GP and patient. Medisoft™ is an ePR system utilised by over 150 hospitals. A letter is automatically generated from information entered electronically by the healthcare professional during a consultation.

Purpose: To assess the quality and time frames of letters produced by ePR and those by conventional dictation.

Method: Eight letters were reviewed from each subspecialty clinic at a supraregional tertiary referral eye hospital over a two week period. Data was retrospectively collected regarding the quality of the letters.

Results: 69 letters were reviewed (53 dictated, 16 ePR). Overall the time for letter production was 4(0-26)(median, range) days where ePR letters were almost instant (0(0)days) compared to dictated letters (8(1-26)days)($p<0.0001$). 84% of letters were copied to the patient (ePR,100%; dictated,79%; $p=0.0469$) and although all ePR letters had a clear layout compared with 83% dictated, ePR letters contained 2.3 more abbreviations and universally had poor quality English compared with only 5.7% of dictated letters.

Conclusion: Although ePR letters are produced rapidly and are compliant with producing a patient copy, they are less coherent than dictated letters.

27. Lothian Optometry Teach and Treat (LOTT) Clinic: Optometrist and Patient Outcomes

Kim Ah-See, Claire Tochel, Donald Cameron, Abha Gupta
National Education for Scotland/NHS Lothian

Introduction: In Scotland, the 2006 update to the General Ophthalmic Services contract increased the duties of optometrists to facilitate expanded community ophthalmic care. The Lothian Optometry Teach and Treat (LOTT) Clinic opened in 2010 to offer training to fulfil these duties and relieve the increasing demand on outpatient services.

Purpose: To audit the performance of LOTT both in terms of optometrist and patient experience.

Method: Retrospective analysis of patient outcome data between March 2013 and March 2014.
Prospective survey of optometrist self-assessment before and after undertaking at least 16 sessions at LOTT, and satisfaction with the teaching received (on completion of training).
Prospective survey of patients' satisfaction with their experience at LOTT from October-November 2014.

Results: Data was available for 3 of 6 LOTT clinics. In one year, 701 patients were seen; 347 (49.5%) were managed within LOTT; only 23 (3.3%) required onward referral and 164 (23.4%) were discharged.

Of 9 participating optometrists, 7 completed self-assessment questionnaires. All recorded overall improvements in subjective performance after LOTT training. 8 optometrists completed teaching evaluation questionnaires and all rated their overall satisfaction with the teaching as 4/5 or higher.Of 75 patients attending LOTT, 40 completed the survey. All rated practitioner performance as between good and excellent, and 87% rated the accessibility of LOTT between good and excellent.

Conclusion: This Teach and Treat Clinic model provides good quality patient care while improving optometrists' subjective assessment of their clinical performance in order to facilitate enhanced community ophthalmic care.

28. Audit to improve the efficacy of clinical coding resulting in improved revenue generation from Laser procedure in Ophthalmic outpatient

Ioana Pereni, Nimish Shah, Nirmala Jha
Great Western Hospital, Swindon

Introduction: We aimed to study the efficacy of current system of recording laser eye procedures.

Purpose: To identify ways to improve the data compiling/coding from clinician to finance and ensure appropriate tariff is paid.

Method: Two month retrospective and prospective audits in 2013 identified that only 31%-39% laser procedures (YAG/Argon) performed in the department were correctly coded and paid, with significant financial loss (over £200,000/2013) to the Trust. Recommendations from the audit for appropriate coding of laser procedures were implemented. A further prospective study was conducted (May-June 2014) collecting information about laser procedures from all paper and electronic outcome forms / records. We aimed to identify the source of omissions (clinicians, clerks, IT) and allow implementation of remedial training and additional measures to improve the systems.

Results: 190 patient records were collated from 3 systems (paper/laser ledger and Medway). A statistically significant improvement was noted from the previous audit. The correctly coded YAG-laser procedures increased from 31% to 61%; the Argon laser procedures were correctly coded in 53% cases compared to 31%. Clerking staff omitted to input the procedure code in 30.52%, significantly higher than clinicians (5.26%).

Conclusion: There was improvement of coding accuracy for all types of laser procedures, attributed to departmental teaching of involved clinicians between the two audits.

Further improvement to coding process is required in order to minimise financial loss (£108,000/2014) and continue to provide ophthalmic services for patients in the current challenging financial environment.

29. Risk of radiation cataractogenesis due to CT head positioning

Nicolas Dziadulewicz, Nadeem Ali, Lakshmi Ratnam
St George's Hospital

Introduction: Computerised tomography (CT) scans can contribute significantly to accrued radiation dose and can cause damage to human tissues. Evidence from studies of exposure to both large and small doses of radiation indicate increased risk of developing cataracts. The Royal College of Radiologists recommend that lenses should be excluded from as many scans as possible and that this can be usually achieved with adequate positioning.

Purpose: The purpose of this audit is to investigate the frequency that lenses are included in routine CT heads.

Method: 50 consecutive CT head scans at our hospital were reviewed retrospectively to see if specifically the lens of each eye (n=100) was included or not. CT heads done for trauma were excluded as the head may be in a neck brace and preclude optimal positioning, and/or orbital fractures may be present and imaging beneficial. Confusion or ongoing seizure activity were excluded due to potential inability to follow instructions or stay positioned. Scans on very young children were also excluded.

Results: It was found that 92% of the lenses were included in the scans and therefore at risk of irradiation.

Conclusion: Guidelines for the exclusion of lenses during CT head scans were not being followed. New local guidelines have been drawn up and implemented. A re-audit will be conducted to assess the effectiveness of this change in protocol. Clinicians need to be aware of the recommendation to exclude the crystalline lens from CT head scans which do not require anterior orbital visualization.

UNLOCK
NEW TREATMENT POSSIBILITIES

Effective IOP reduction
with a new combination

- **Up to 37%** mean IOP reduction vs. baseline[1]
- **Predictable safety profile** – similar to the individual components[1]
- **The only fixed combination therapy for glaucoma without beta-blockers**

Alcon®
a Novartis company

SIMBRINZA®
10 milligrams/ml + 2 mg/ml
eye drops suspension
(brinzolamide/brimonidine)

ONE BOTTLE. MANY POSSIBILITIES.

SIMBRINZA® 10 mg/mL + 2 mg/mL eye drops, suspension (brinzolamide and brimonidine tartrate) Prescribing Information (Refer to full Summary of Product Characteristics (SmPC) before prescribing) **Presentation:** Plastic bottle containing 5 ml eye drops. Each 1 ml contains 10 mg of brinzolamide and 2 mg of brimonidine (as tartrate). **Indication(s):** Decrease of elevated intraocular pressure (IOP) in adult patients with open-angle glaucoma or ocular hypertension for whom monotherapy provides insufficient IOP reduction. **Posology and method of administration:** ***Adults:*** *including the elderly:* one drop twice daily. ***Children and adolescents:*** Not recommended. Due to safety concerns Simbrinza should not be used in *neonates and infant* aged less than 2 years. ***Use in hepatic and renal impairment:*** Use with caution in patients with hepatic impairment. Not recommended for patients with severe renal impairment or hyperchloraemic acidosis. **Contra-indication:** Hypersensitivity to active(s), excipients or sulphonamides; patients receiving monoamine oxidase (MAO) inhibitor therapy, or antidepressants affecting noradrenergic transmission (e.g. tricyclic antidepressants and mianserin). Patients with severe renal impairment or hyperchloraemic acidosis. Neonates and infants under the age of 2 years. **Warnings and precautions:** *Ocular effects:* Not recommended in patients with narrow-angle glaucoma. Patients wearing contact lenses or with compromised cornea should be monitored carefully when treated with Simbrinza. Treatment with Simbrinza should be discontinued if allergic reactions are observed. The Brimonidine tartrate within Simbrinza may cause delayed ocular hypersensitivity reactions associated with an increase in IOP. The cessation of treatment with Simbrinza has not been studied, therefore caution should be taken when discontinuing the treatment with this product. *Systemic effects:* same type of adverse effects as seen with sulphonamides may occur. *Cardiac disorders:* Use with caution in patients using antihypertensives and/or cardiac glycosides, and in patients with severe or unstable and uncontrolled cardiovascular disease, depression, cerebral or coronary insufficiency, Raynaud's phenomenon, orthostatic hypotension or thromboangiitis obliterans. *Acid/base disturbances:* Same type of adverse effects as seen with oral carbonic inhibitors may occur. *Mental alertness:* Ability to perform tasks requiring mental alertness and/or physical coordination in elderly patients may be impaired. *Benzalkonium chloride (BAK):* Contact with soft contact lenses should be avoided. **Interactions:** No specific studies performed. Caution is advised when using Simbrinza due to the possibility of an additive or potentiating effect with CNS depressants. Use with caution in patients taking medicinal products which can affect the metabolism and uptake of circulating amines and in patients using antihypertensives and/or cardiac glycosides. Use with caution when initiating a concomitant therapy with adrenergic receptor agonists or antagonists. Acid-base disturbances may occur, the concomitant administration of SIMBRINZA and oral carbonic anhydrase inhibitors is not recommended. Caution should be taken when use with CYP3A4 inhibitors. **Fertility, pregnancy and lactation:** *Pregnancy:* Not recommended during pregnancy and in women of child bearing potential not using contraception. *Lactation:* Not recommended. Fertility: No data are available. **Effects on ability to drive and use machines:** May cause dizziness, fatigue and/or drowsiness, blurred vision or other visual disturbances. Patients should wait until vision is clear before driving or using machines. **Undesirable effects:** Common: somnolence, dizziness, dysgeusia, eye allergy, keratitis, eye pain, ocular discomfort, blurred vision, abnormal vision, ocular hyperaemia, conjunctival blanching, dry mouth. *Serious side effects:* uveitis, cardio-respiratory distress, angina pectoris. Prescribers should consult the SmPC in relation to other side effects. **Overdose:** Acidotic state, and possible nervous system effects may occur. If accidental ingestion, hypotension followed by rebound hypertension may be observed. Symptoms of oral overdose of other alpha-2-agonists include hypotension, asthenia, vomiting, lethargy, sedation, bradycardia, arrhythmias, miosis, apnoea, hypotonia, hypothermia, respiratory depression and seizure. *Paediatric population:* If ingested symptoms of CNS depression (typically temporary coma or low level of consciousness, lethargy, somnolence, hypotonia, bradycardia, hypothermia, pallor, respiratory depression and apnoea). Treatment is symptomatic and supportive, may require hospital admission in case of pediatric ingestion. **Legal Category:** POM. **Package Quantities and Basic NHS Costs:** Cartons containing 1 x 5 ml £9.23. MA Number(s): EU/1/14/933/001. **Further information available from the MA holder:** Alcon Laboratories (UK) Ltd, Frimley Business Park, Frimley Camberley, Surrey, GU16 7SR United Kingdom. **Date of preparation:** July 2014 (V1)

Adverse events should be reported. Reporting forms and information can be found at www.mhra.gov.uk/yellowcard.
Adverse events should also be reported to Alcon Medical Information. Tel: 0871 376 1402.
Email: GB.ADR@alcon.com

Reference:
1. SIMBRINZA® Suspension. Summary of Product Characteristics, July 2014.

Alcon®
a Novartis company

 Date of preparation: August 2014 SIMB1005

SIMBRINZA®
10 milligrams/ml + 2 mg/ml
eye drops suspension
(brinzolamide/brimonidine)

ONE BOTTLE. MANY POSSIBILITIES.

30. Clinical outcomes following intravitreal steroid implant (Ozurdex) for Retinal Vein Occlusions

Adam Kara, Samantha Mann
St. Thomas' Hospital, London

Introduction: Sustained-release dexamethasone implants (Ozurdex) were previously the first-line treatment for cystoid macular oedema (CMO) secondary to branch or central retinal vein occlusions (BRVO and CRVO). Now superseded by ranibizumab, Ozurdex remains a second-line therapy for patients with visual acuity (VA) below 6/12, especially if anti-VEGF treatment cannot be tolerated.

Purpose: To describe the 12-month outcomes of as-required repeat injections of 0.7mg intravitreal dexamethasone implants, in patients with CMO secondary to BRVO or CRVO.

Method: Standards-based audit of 26 eyes with CMO secondary to BRVO or CRVO, that received 'Ozurdex' treatment with 12 months of follow-up.

Results: 31% of BRVO and 38% of CRVO eyes achieved maximal VA gains of ≥15 EDTRS letters within 12 months with an average of 1.7 and 2.2 injections, respectively. 8% of BRVO and 15% of CRVO eyes maintained these VA gains at 12 months. 15% of all treated eyes had VA loss ≥15 letters at 12 months due to persistent oedema. Increased duration of CMO prior to 'Ozurdex' therapy was also associated with poorer visual outcome. 15% of treated eyes developed intraocular pressure ≥25mmHg, and were treated adequately with topical medication. Cataract progression was observed in 19% of treated eyes.

Conclusion: VA gains following 'Ozurdex' therapy were similar to those in the GENEVA trial (2010). VA loss may be reduced with prompt and more frequent dosing, although cataract can limit visual improvement. We recommend that Ozurdex be used to manage CMO of 3 months duration or less, when anti-VEGF agents cannot be tolerated.

31. Variation in quality and availability of patient information leaflets in East Anglia

David Bishop, John Somner, Keith Martin, Jesse Gale
Addenbrooke's Hospital

Introduction: Patient information leaflets are an important part of safe, high quality care and their use is promoted in the Royal College's quality standards. Good patient information can enhance shared decision making, reduce complaints, assist informed consent, increase patient safety and save time. To be functional they must contain high quality information and be readable, and available.

Purpose: We evaluated the current provision of ophthalmology patient information leaflets in East of England in terms of quantity and readability.

Method: All patient information leaflets were obtained from eight eye departments in East Anglia. Analysis of gaps and duplication was undertaken comparing the departments against each other and against Sunderland Eye Infirmary, the Royal College of Ophthalmologists, and www.patient.co.uk. Readability was assessed using four standardised scales. Font size, advertising, illustration, word count, thematic analysis and structure were also assessed.

Results: The response rate was 71% (10 of 14 hospitals). Overall, the mean number of leaflets was 16.25 (range 10-27) which compared to 16 on the RCO website and 83 at Sunderland. Several gaps were identified including age-related macular degeneration (AMD), neuro-ophthalmology, and uveitis. 83% of centres had information with an average reading level above the recommended level.

Conclusion: Patient information varied greatly in quality and quantity with leaflets used inconsistently and wastefully. A centralised, online, open-access system (such as a wiki) could be useful for providing high quality, peer reviewed information to print in the hospital or at home.

32. Do patients with diabetic retinopathy need earlier referral to the diabetes specialists?

Sunil Mamtora, Teresa Sandinha, Peter Carey
Sunderland Eye Infirmary

Introduction: The Royal College of Ophthalmologists recommends that Ophthalmologists opportunistically assess the need for specialist medical interventions in patients presenting with diabetic retinopathy. However, they do not provide specific guidelines as to when a patient should be referred to a diabetes specialist.

Purpose: Referrals from our eye department to the diabetologist between May 2013 and August 2014 were reviewed with the aim of identifying which patients were referred and what changes were made to their management. This data could shape a local framework for referral to specialist diabetes services.

Method: Patient records were accessed retrospectively. Cardiovascular risk factors such as HbA1c, BP, BMI and Lipids were recorded and changes made to their management identified.

Results: Thirty-two patients were referred between the aforementioned dates. Initial visit changes to the management of the patients' diabetes were made in 24 out of 32 patients (75%). Of these 24 patients, 21 (88%) had either pre-proliferative or proliferative retinopathy in at least one eye. Changes related to blood pressure control were made in 17 (81%) of these 21 patients; only 7 (33%) had changes to the management of their glycaemic control.

Conclusion: Patients had changes to their BP, Lipid and Diabetes medications including insulin. Those with either pre-proliferative or proliferative retinopathy had changes predominantly relating to blood pressure control, implying that their treatment was suboptimal. Measuring blood pressure in the eye department may prove a useful tool in identifying patients suitable for referral to diabetes specialists.

33. Pilot multi-centre electronic trabeculectomy audit

John Somner, Rob Johnston, Mitch Menage, Keith Martin, Madhu Nagar, John Sparrow, Rupert Bourne
Vision & Eye Research Unit, Anglia Ruskin University

Introduction: Electronic medical records (EMRs) are being widely adopted but their benefits are more subtle and contingent than proponents advertise.

Purpose: To demonstrate the ability of EMRs to describe practice patterns for primary trabeculectomy.

Method: Pseudo-anonymised data were extracted from an EMR (Medisoft) on 3288 primary trabeculectomies performed on 2669 patients at six hospitals between 2001–2014.

Results: The median number of cases for the 28 consultant surgeons was 12 per annum (range 1-62). The presence or absence of postoperative complications was recorded in 40% of cases, 7.4% of cases had at least one and 27% required post-operative manipulation. Time between listing for surgery and the operation was negatively correlated with baseline IOP ($rs=-0.22$ $p<0.001$) but not baseline MD ($rs=-0.012$ $p=0.7$). Patients in the most deprived IMD quartile had significantly worse MD at diagnosis than all the other quartiles combined (Median -11dB vs -8.4dB $p<0.001$). The median number of pre-operative clinic visits, VF tests, VFs in the 2 years before surgery and days between first VF and surgery were 9, 6, 2 and 1796 respectively. In the first year post-op the median number of visits was 6 and over 5 years 15. By five years post-op the success rate was 49% and 14.4% had received further glaucoma surgery.

Conclusion: This study demonstrates the benefits of EMR by rapidly extracting relatively comprehensive data to produce the world's largest dataset of trabeculectomy procedures. It identified that social deprivation and older age are correlated with more severe glaucoma pre-operatively.

34. Audit of retinal screening uptake in young adult diabetic patients

Monil Karia, Kevin Baynes
Ealing Hospital

Introduction: Retinopathy is a common microvascular complication of diabetes affecting approximately 40% of diabetic patients in the UK. The national diabetic retinopathy guidelines recommend annual retinopathy screening for adult diabetic patients.

Purpose: This retrospective audit aimed to determine the level of retinal screening uptake in young adults aged 16-25 and identify reasons why patients were not screened.

Method: 119 diabetic young adults aged 16-25 were identified from the local diabetic eye screening programme (DESP). The number of patients who attended a retinal screening appointment in 2013 were recorded along with the reasons for patients not being screened.

Results: Out of the 119 diabetic young adults identified 80 (67%) were registered at the local DESP, 21 (18%) were registered elsewhere and 18 (15%) were not registered on any screening programme. Of the 80 patients registered at the local DESP 45 (55%) were screened in 2013. Of the 35 (45%) patients that were not screened 18 (51%) did not attend their appointment, 2 (3%) opted out of screening and the remaining 15 (46%) had no recorded reason. Of the 35 not screened 13 (16%) had never been screened and 10 (29%) had previous evidence of diabetic retinopathy.

Conclusion: This audit demonstrated a low level of screening uptake in young adults with the majority of these patients not attending their scheduled appointments. Many subjects had either never been screened or were not registered on any screening programme. Methods to improve screening uptake in young adults to an acceptable level need to be implemented to ensure early identification of diabetic retinopathy.

35. Experience of Dexamethasone Implant (Ozurdex) in the Treatment of Macular Oedema in Retinal Vein Occlusion in a District General Hospital

Alan Abraham, Richard Manns, Mandeep Singh Bindra
Stoke Mandeville Hospital

Introduction: NICE approved use of Dexamethasone intravitreal implant (Ozurdex) for treatment of macular oedema following retinal vein occlusion (RVO) in 2011.

Ozurdex has been the first line treatment for macular oedema in RVO in Buckinghamshire NHS Trust since Jan 2012.

Purpose: To measure outcomes of Ozurdex treatment in a 'real world' non teaching-hospital setting and compare with published results used to guide NICE approval.

Method: Retrospective case note review for all patients receiving Ozurdex for macular oedema in RVO between January 2012 and Sep 2013 with one year follow up following start of treatment.

Results: 70 patients identified with one year follow up. The mean number of Ozurdex injections was 1.2 in the first year. Mean number of follow up visits in the first year was 7.5.

21.4% patients had raised intraocular pressure (IOP) during first year following treatment. 80% of these required topical pressure lowering treatment at first visit. 46.7% continued treatment at 12 months.

38.6% of patients had improved visual acuity at 1st visit, 10% showed over 3 lines improvement (Snellen acuity) at first visit; at 12 months this figure was 11.4%. 35.7% of patients had fully resolved macular oedema at first clinic visit.

Conclusion: Compared to the trials considered by NICE, our results showed a lower percentage of patients had significantly improved visual acuity, a higher percentage had raised IOP and patients needed more hospital visits within one year following treatment.

36. Outcomes of diabetic patients with asymptomatic retinal emboli detected by retinal screening

Afsara Ahmmed, Teresa Sandinha, Peter Carey
Sunderland Royal Hospital

Introduction: Asymptomatic retinal emboli are associated with an increased risk of stroke. Those also with diabetes are at additional risk of cardiovascular disease. It is important to optimise patients' cardiovascular risk factors and ascertain the level of carotid artery stenosis to prevent stroke through medical or surgical intervention.

Purpose: To assess in diabetic patients with asymptomatic retinal emboli those with significant carotid artery disease and how cardiovascular risk factors were managed.

Method: Retrospective study of patients referred from the local retinal screening service to a consultant diabetologist between January 2013 and April 2014. Risk factors for cardiovascular disease were recorded. Pre-existing TIAs and strokes were also recorded. All patients had a carotid Doppler ultrasound.

Results: Forty-five eyes of 44 patients had retinal emboli. Eight (21%) patients had significant carotid artery stenosis (> 70%). Of these eight patients, three were referred to the vascular MDT and one subsequently underwent endarterectomy. The other five patients had complete occlusion of one carotid artery and were managed with maximal medical therapy. Seven patients had angiograms to confirm the level of stenosis. Two patients previously graded as 50-60% stenosis with Doppler, were subsequently found to have 80% stenosis on angiogram. Seven patients had a previous stroke or TIA, 2 with significant stenosis at presentation.

Conclusion: Asymptomatic retinal emboli are important in detecting those patients at risk of stroke and therefore it is important to optimally manage cardiovascular risk factors and assure all patients receive Doppler ultrasound.

37. Twelve month visual acuity outcomes and treatment frequency for retinal vein occlusion treated with intravitreal ranibizumab.

Richard Barry, Colin Chu, Ahmed Sallam, Quresh Mohamed, Emily Fletcher, Robert Johnston
Gloucestershire Hospitals NHS Foundation Trust

Introduction: To audit the twelve month visual acuity outcomes and treatment frequency for all eyes treated with intravitreal ranibizumab for retinal vein occlusion in a single UK centre, and compare with published trials.

Purpose: To analyse mean baseline, change and final visual acuity (ETDRS letters), visit and treatment frequency, percentage of eyes achieving >15 letter improvement from baseline and a final VA of 70+ letters, as well as mean baseline and change in central retinal thickness (CRT).

Method: Three years of anonymized data within an electronic medical record system (Medisoft Ltd) was extracted from a single UK centre. The data included mean baseline, change and final VA, visit and treatment frequency and mean baseline and change in CRT for all retinal vein occlusion patients treated over a twelve month period with intravitreal ranibizumab.

Results: One hundred and forty five eyes received treatment over a twelve month period. The mean baseline, change and final VA were 45.1, 13.1 and 58.2 respectively. Mean visit and treatment frequency were 7.4 and 5.5. In addition, those eyes achieving >15 letter improvement and final VA of 70+ letters were 33.3% and 39.4% respectively. Mean baseline and change in CRT were 591.8 microns and 281.7 microns respectively.

Conclusion: This study presents clean twelve month data from a single UK centre on all retinal vein occlusion patients treated with intravitreal ranibizumab. The results are comparable with published data.

38. MRI head: Do we, as Ophthalmologists request and follow up scans appropriately?

Shreya Haldar, Bina Parmar
Milton Keynes General Hospital

Introduction: Neuroimaging, especially MRI is becoming an increasingly important tool for ophthalmologists particularly with advancements providing improved image quality of ocular structures [1]. Additionally, in a climate of increasing litigation with mean payments per claim highest in Neuro-ophthalmology and Paediatric ophthalmology, appropriate investigation is paramount [2].

Purpose: To audit the appropriateness of MRI head scans requested by the Paediatric/Neuro-ophthalmology team at Milton Keynes General Hospital.

Method: A retrospective analysis of patients who underwent MRI head in one year was conducted. Patient demographics, indications, MRI findings and outcomes were collated.

Results: 44 patients were identified. 42 patients' complete notes were retrieved comprising of 24 adults and 18 children. In adults the most common indications were diplopia +/-cranial nerve palsy (n=9, 37.5%), thyroid eye disease (n=4, 16.6%) and optic disc swelling (n=3, 12.5%). 46% (n=11) of scans demonstrated abnormalities.

The most common indications in children were reduced visual acuity (n=7, 38.9%), manifest squint with suspicious features (n=5, 27.8%) and nystagmus (n=3, 16.7%). 56% (n=10) demonstrated abnormalities.

Overall 50% of scans were reported as abnormal requiring intervention. 100% of scans were appropriately followed up.

Conclusion: Our audit showed that 50% of MRI's requested demonstrated abnormalities requiring intervention. This compares favourably to similar studies, for example, a study looking at neuroimaging in its entirety reports a 30% yield rate [3].

Frequently ophthalmologists are the first clinicians to assess patients with serious pathologies often masked by subtle clinical signs. Our results show that ophthalmologists are requesting MRI head scans appropriately and should continue to do so to ensure safe patient care.

39. Audit of Visual Impairment Certification in Patients with Diabetes Mellitus

Gisela Barcat Angelelli, Tomas Burke, Fiona Cuthbertson
Royal United Hospital

Introduction: Diabetic retinopathy is a major cause of vision loss, especially in working age populations. Appropriate registration of patients with sight impairment (SI) or severe sight impairment (SSI) is necessary to ensure access to appropriate benefits and services.

Purpose: To determine if patients with diabetes mellitus and vision loss who are eligible for vision impairment registration, are being certified appropriately within our department.

Method: Diabetic patients eligible for SI or SSI registration between 08/2010 and 01/2014, were identified from Medisoft. Each patient's previous level of registration was determined from the local Diabetic Retinopathy Screening Service database. Criteria used to determine eligibility for certification were taken from national guidance published by the Department of Health.

Results: 45 patients were eligible for SSI registration. Of these, 10 were already certified as SSI, 10 as SI, and 25 were not certified. Vision loss was due to diabetic retinopathy and/or its treatment in 20 (44%) of these patients. 91 patients were eligible for SI registration. Of these, 19 were certified as SI, 3 as SSI, and 69 were not certified. Vision loss was due to diabetic retinopathy and/or its treatment in 30 (33%) of these patients.

Conclusion: The majority of patients who were eligible for vision impairment registration were not certified appropriately in either group. Specific training and information is required to encourage clinicians to identify these individuals and offer appropriate registration.

40. Aiming for Perfection: a Closed-loop Audit into Retinopathy of Prematurity Screening

Ruth Darbyshire, Vernon Long
Leeds Teaching Hospitals Trust

Introduction: Retinopathy of prematurity (ROP) is a potentially sight-threatening condition which adversely affects retinal vascularisation in preterm neonates. Screening at risk neonates enables treatment which may avert a lifetime of preventable visual impairment.

Purpose: To determine whether neonates who met Royal College Guidelines (2008) inclusion criteria were screened within the correct timeframe.

To identify neonates who were not appropriately screened, identify and address risk factors for missed screening with a view to reducing future cases.

Method: The neonatal Badger database was searched between May 2012-May 2013 to identify:

- Neonates eligible for ROP screening
- All ROP screens performed

The screening window was calculated according to Royal College Guidelines (2008). The data were then matched to assess whether each screen occurred during the screening window. A formal meeting was held to implement strategies to reduce missed cases and a repeat of the audit cycle was performed for May 2013-May 2014.

Results: In the first cycle, 94.8% of neonates who met eligibility criteria were screened during their calculated ROP timeframe. 5 were seen within 30 days after the window but 3 were seen at 37, 47 and 52 days late. In the second cycle 85.9% of neonates were screened on time. However of the 18 neonates which were screened late, 17 were seen within 30 days.

Conclusion: ROP screening is a very real challenge to paediatric ophthalmologists. This audit generated logistical methods to improve the neonatal screening service which are of value to other trusts.

41. Audit on the Outcomes of Pterygium Surgery with Conjunctival Autograft and Fibrin Glue

Alexandra Oltea Puiu, Sathish Srinivasan
Departement of Ophthalmology, University Hospital Ayr

Introduction: The surgical excision for symptomatic pterygium involves different techniques which include securing a conjunctival autograft with either traditional sutures or fibrin glue. The main challenge for successful pterygium surgery is the rate of its recurrence. This audit evaluates the outcomes of pterygium excision and conjunctival autograft (PECA) with fibrin glue compared to published literature.

Purpose: To report the clinical outcomes, complications and recurrence rate following PECA with fibrin glue in patients with symptomatic pterygium.

Method: A retrospective single surgeon audit. Between 2008 and 2014, 40 eyes of 37 subjects with symptomatic pterygium underwent PECA with fibrin glue under local anaesthesia by a single surgeon. Data on preoperative best corrected visual acuity (BCVA), indication for surgery, intraoperative and postoperative complications and recurrence rates were collected.

Results: There were no intraoperative complications. The mean follow up for this cohort was 18 months (range 4 to 51). At the mean follow up of 18 months there were no cases of pterygium recurrence. Post operatively two eyes (5%) developed pyogenic granuloma that was treated successfully with topical steroids, six eyes (15%) developed steroid induced intraocular pressure rise that required long term treatment and one eye (2.5%) developed dellen that was successfully treated with intense topical lubrication.

Conclusion: PECA with fibrin glue is a safe and effective technique for the surgical management of symptomatic pterygium. Post operatively these patients need to be monitored steroid induced IOP rise and managed appropriately.

42. Does AdenoPlus test have a role in the Acute set-up in patients with recurrent conjunctivitis, those with conjunctivitis not responding to treatment or unknown cause for conjunctivitis?

Stavroula Boukouvala, Lisa Berry, Linzi Randle, Michelle Ford, Judith Timms, Purnima Mehta
University Hospital Of Coventry And Warwickshire

DRI OCT Triton
See, Discover, Explore.

New dimension of OCT technology penetrating through cataract and haemorrhage, right through to sclera.

- First commercially available anterior and posterior Swept Source OCT
- 1050nm wavelength
- 100,000 A-Scans/second, ideal for severe AMD, elderly patients and children
- 256 B-Scans/second
- High resolution Fundus imagery
- Pinpoint Registration™ between the Fundus camera and the OCT
- Perfect visualisation of choroidal structures
- Green Autofluorescence and digital red free imagery in one unit (DRI OCT Triton Plus only)

Tomorrow's technology... Today.

For more information, contact Topcon today

TOPCON GB Limited
- t: 01635 551120
- medical@topcon.co.uk
- www.topcon-medical.co.uk

TOPCON IRELAND
- t: 01897 5900
- medical@topcon.co.uk
- www.topcon-medical.ie

PERFORMANCE
YOU CAN COUNT ON

TOPCON

» OCT-Angiography is quick, easy, repeatable & safe. It enables early intervention and improves clinic workflow. «

Please visit the HS-UK STAND (Q) at RCOphth 2015 to see it in action

ANGIOVUE

The only commercial OCT-Angiography (OCTA) system

Introducing AngioVue

The AngioVue is the only commercially available OCT-Angiography system capable of imaging and displaying function and structure of the ocular microvasculature - through a non-invasive procedure.

Non-invasive, repeatable

Unlike conventional Fluorescein Angiography, the AngioVue can image different layers of microvasculature without requiring dye injection, enabling you to repeat the procedure as many times as necessary.

3D en face imaging

En face viewing of the 3D data allows for selected layers of the retina to be assessed for small changes in structure and function. This enables you to visualise the anatomic layers, including the; outer retina and the superficial, deep and choroidal capillaries.

(01279) 883829 | angiovue@haag-streit-uk.com | www.haagstreituk.com/angiovue

HAAG-STREIT UK

Introduction: Previous studies have described AdenoPlus as an accurate and cost-effective aid in the rapid differential diagnosis of acute conjunctivitis.

Purpose: The purpose of the study was to compare the sensitivity and specificity of AdenoPlus with viral polymerase chain reaction(PCR) at detecting adenoviral conjunctivitis in patients with recurrent or not responding to initial treatment or with unknown cause conjunctivitis.

Method: This was a prospective study of 19 patients who presented to the acute eye clinic and had both AdenoPlus and viral PCR done. Patients with clinical diagnosis of adenoviral conjunctivitis were excluded.

Results: Of the 19 patients, 5 patients (26%) had conjunctivitis not responding to initial treatment, 1 (5%) had recurrent conjunctivitis and 13 patients(69%) had conjunctivitis with cause not known clinically.

One patient (5%) showed positive result for both tests. This patient had conjunctivitis with cause not known clinically. Three patients (16%) showed positive result for viral PCR, but negative for AdenoPlus. One of them had conjunctivitis with cause not known clinically and 2 had conjunctivitis not responding to treatment. The remaining 15(79%) were negative for both.

Comparing with PCR, AdenoPlus showed a sensitivity of 25%(1/4) and specificity of 100%(15/15), a negative predictive value of 83%, a positive predictive value of 100%, and overall agreement of 84%(16/19).

Conclusion: The results of our study show, although AdenoPlus has got a very high specificity, its sensitivity is very low in this group of patients and hence does not have a role in our acute eye clinic set-up for their initial management.

43. iCare Rebound Tonometry versus Goldmann Tonometry when used by the non-ophthalmologist

Radon Reynolds, Cheryl Macgregor, Roger Humphry
Salisbury District Hospital

Introduction: Goldmann tonometry is the gold standard for intraocular pressure (IOP) measurement. It does have disadvantages and can be difficult to use for non-ophthalmologists. Although evidence still advocates its superiority, newer, more convenient methods like the iCare are, in certain circumstances, an increasingly popular substitute.

Purpose: To assess whether iCare is more reliable for measuring IOP in the hands of non-ophthalmologists.

Method: A Foundation year 2 (F2) doctor with basic training using Goldmann tonometry, used iCare and Goldmann tonometers to measure IOP of all consenting patients attending clinic, after an ophthalmologist had measured their IOP – this served as a control. The F2 was blinded to the control reading. 50 eyes were recruited. One-way ANOVA and Bland-Altman plot were use for statistical analysis

Results: iCare tended to overestimate IOP by 1mmHg. Goldmann tended to overestimate IOP even more, when used by the F2. However, the F2 Goldmann measurements were more consistently overestimated, compared to the iCare, which underestimated eye pressures more often. Separate analysis of the latter 25 eyes produced closer measurements to the standard with both Goldmann and iCare, indicating importance of experience, the effect being greater with Goldmann.

Conclusion: Overall, iCare was just as reliable as Goldmann in the hands of the non-ophthalmologist. Practically, using the iCare is the more attractive option, as it is quicker and requires less training. Its use could be advocated in settings like A&E as a screening tool for non-ophthalmologists.

44. The intra-ocular pressure is as good as your tonometer!

George Moussa, Ibrahim Elaroud, Faisal Idrees, Walter Andreatta, Velota Sung
Birmingham Midland Eye Centre

Introduction: Measuring intro-ocular pressure (IOP) using a Goldmann-applanation-tonometer (GAT) is an essential component of the ophthalmic examination. Accuracy of measuring IOP is fundamental, particularly when dealing with glaucomatous patients. A small error may lead to starting patients on long term topical treatment. More substantially this may lead to more extensive treatment, such as IOP lowering surgery. Ophthalmology departments generally have local guidance on calibration, but this is often overseen in busy clinics, which could have detrimental effect on patient management by either under or over treating.

Purpose: To assess the calibration status of GAT in 3 large regional eye departments.

Method: We included all GAT, which were on clinical use in multicentre regional audit. The calibration rod was used as by manufacturer guidance to assess calibration status at the 0, 20 and 60 positions.

Results: Fifty-nine tonometers were checked of which 46% were calibrated. Seventy-five were calibrated within the ±2 threshold leaving a quarter either over or underestimating IOP. Eight percent had readings ±4, with 1 underestimating IOP at 7.

Conclusion: Although calibration of GAT is a well known task, it is often missed or delayed in busy departments, this can have a detrimental effect on patient management. This includes starting topical medication or even worse having unnecessary surgery. We want to reiterate the importance of regular calibration with a timetable and possibly a designated person to champion it.

45. Improving Acute Eye Consultations in General Practice

Michelle Teo
Birchwood Medical Practice, Lincolnshire NHS Trust

Introduction: There is evidence that patients with acute eye symptoms are poorly assessed in primary care. There is a tendency to diagnose conjunctivitis in any acutely red eye. This has led to delays in treatment and in some cases, permanent loss of sight.

Purpose: As little is known about how general practitioners investigate ophthalmic problems, the aim of this project was to examine their current practice and identify changes that could improve the quality of eye consultations in primary care.

Method: All cases coded "conjunctivitis" over one year (n=144) were retrospectively audited for documentation of the 'red-flag' findings highlighted by NICE guidelines (pain, photophobia, reduced visual acuity and the unilateral red eye).

It was identified that the main areas for improvement were education and availability of equipment. All doctors received teaching on the subject, reinforced with memory aids. A 'GP eye examination kit' was also developed.

The practice was re-audited 6 weeks post-intervention (n=16).

Results: Initially, only 2.8% of consultations recorded all four findings. This increased to 50% post-intervention ($p<0.01$).

Screening for pain increased from 26% to 63% post-intervention; visual acuity 35% to 69%; photophobia 6% to 63% and whether the symptoms were unilateral or bilateral increased from 88% to 94%.

Conclusion: The initial audit indicated that general practitioners often diagnosed conjunctivitis without screening for symptoms of sight-threatening disease.

The results show significant improvements can be achieved with practical and inexpensive interventions. Therefore, general practices throughout the UK are encouraged to adopt similar strategies to improve the identification of patients needing same-day Ophthalmology assessment.

46. Aligning the UK Minimum Cataract National Data Set with the International Consortium for Health Outcomes Measurement Minimum Standard Set: moving towards global outcomes measurement

Imran Mahmud, Thomas Kelley, John Sparrow
International Consortium for Health Outcomes Measurement

Introduction: Routine outcomes measurement has accompanied improvements in healthcare outcomes across many clinical conditions. Within cataract surgery, the most commonly-performed operation in the UK, the Royal College of Ophthalmologists (RCOphth) is developing a Minimum Cataract National Data Set (MCNDS) that will collate outcomes from all surgeries performed nationally.

Purpose: We aimed to assess alignment between the RCOphth MCNDS and the cataract outcomes framework developed by the International Consortium for Health Outcomes Measurement (ICHOM) in order to determine whether the MCNDS can contribute to global outcomes measurement efforts.

Method: A gap analysis was performed to identify areas of non-concordance in database design between the two sets. Differences between the datasets were classified as major (introduction of new metric or parameter) or minor (definition adjustment of existing metric)

Results: Of 33 items spanning 11 domains in the ICHOM MSS, 14 were misaligned, 4 of which were classified major discrepancies (post-operative follow up period, pre-operative and post-operative patient-reported health status, record of pre-operative corneal refractive surgery), and 8 concerned minor differences concerning definitions or wording.

Conclusion: Our results show a high degree of concordance between the two data sets. The NHS MCNDS records 88% (29/33) of all ICHOM MSS data points either exactly or with very close alignment, suggesting that it will be possible for cataract surgeons in the UK to contribute their outcomes to an established global cataract surgery outcomes databases. We suggest contributing would be mutually beneficial, and therefore advocate for alignment of the NHS MCNDS with the ICHOM MSS.

47. Amblyopia: Key Performance Indicators

Kelly MacKenzie, Alison Davis
Moorfields Eye Hospital

Introduction: Key Performance Indicators (KPIs) are used in healthcare settings to define and measure progress towards organisational goals. There is a wide variance in the treatment of amblyopia nationally and internationally. This raises the question whether KPIs for amblyopia should be introduced.

Purpose: In 2013 MEH introduced new amblyopia treatment guidelines. The outcomes of which were compared to KPIs presented by the Greater Manchester head orthoptists group:

1. 80% of children under going occlusion therapy, who are compliant with treatment and have no organic cause for reduced vision, will see 0.2 or better in their weaker eye on discharge
2. 99% of children under going occlusion therapy, who are compliant with treatment and who have no organic cause for reduced vision, will see 0.2 or better in one eye on discharge

Method: Retrospective case note review. We compared the MEH outcomes with these KPIs.

Results: 45 patients with intraocular difference following spectacle adaptation of between 1.700 and 0.200 LogMAR visual acuity due to strabismic, refractive or mixed amblyopia were reviewed. 44% obtained KPI target 1 of 0.2 or better (SD 0.3), with 94% of patients meeting KPI target 2.

Conclusion: Although KPI target 1 was only met by 44%, over 75% of patients did obtain vision in the weaker eye of 0.3 or better which is considered functioning vision. KPIs must reflect the challenges faced in treatment i.e. compliance, the variation in visual acuity in the amblyopic eye at presentation, the age of target population and the duration of treatment.

48. Financial implications for on the day cancellation of ophthalmic surgery

Priscilla Mathewson, Fiona Mason, Soupramanien Sandramouli
Wolverhampton

Introduction: Cancellation on the day of surgery is disruptive to patients and incurs an opportunity cost that is both financial and impacts waiting list times. Currently a £455 tariff is paid for any case cancelled on the day of surgery for medical or patient related reasons. No tariff is levied if the cancellation is the fault of the facility.

Purpose: This audit sought to assess the financial implications of ophthalmic cases cancelled on the day of surgery over 6 weeks.

Method: Retrospective data was collected for all ophthalmic cases cancelled on the day of surgery between 20/06/14 and 31/07/14. Data was collected from electronic records and patient notes. Reasons for cancellation were documented along with whether the cancellation was avoidable. The costs of the procedures were calculated by correlating Procedure Codes with Healthcare Resource Codes that were obtained through our department.

Results: Twenty-one out of 545 cases were cancelled on the day of surgery (3.85%), 6 by patients, 6 by Surgeons, 5 by Anaesthetists and 4 by the facility. Seven cancellations were avoidable. The financial loss for all cancellations was £15,891. This figure was still as high as £9,066 once the £455 tariff for unavoidable cancellations had been accounted for.

Conclusion: Though the number of on the day surgical cancellations was low, the financial implication for these cancellations was found to be substantial. Hence, every effort must be made to improve the rate of on the day cancellation figures with appropriate planning of surgical lists.

49. A Service Evaluation of Referral-only, Eye Emergency Care Delivery Model

Aws Al-Hity, Sumona McLaughlin, Elisabeth Macdonald, Paul Cauchi, Deepa Anijeet
Gartnavel General Hospital

Introduction: Since the Scottish government's provision of free eye examinations in 2006, community optometrists are playing a frontline role in primary eye care. In 2011, the previous "walk-in" eye casualty service was replaced with secondary, referral-only acute referral centre (ARC) at Greater Glasgow and Clyde NHS Trust. Reviews from ARC were managed by Primary Care Clinics (PCC) led by consultants.

Purpose: The purpose is to evaluate the service's effectiveness and efficiency in relation to the previous 'walk in' model.

Method: In April 2014, data of all patients attending the ARC over a four-week period was collected. Data collected comprised patients' demographics, sources of referral, waiting times, diagnoses, investigations, management, outcomes and satisfaction.

Results: A total 514 patients were analysed.The most common sources of referral were optometrists 156(30%) and General Practitioners 94(18%). 62% of patients were seen within 60 minutes and 89% within 120 minutes of arrival. The most common diagnoses were anterior segment 234(45%), retina 86(17%) and uveitis 45(9%). 392(70%) patients did not undergo investigations. 186(36%) were discharged, 145(28%) received clinic follow-up and 109(21%) were reviewed in PCCs. Patient satisfaction was positive across all domains.

Conclusion: This structural re-modelling has shown that a secondary eye emergency service can replace a 'walk in' service that is currently prevalent elsewhere without affecting effectiveness. With optometrists managing minor eye ailments in the community, demand on expensive hospital-based treatment can be avoided as envisaged in national health care policies.

50. A Retrospective Review Of Orbital Lesion Biopsies In A Regional Tertiary Unit

Kaveeta Kaur Bedi, Karnesh C Patel, Bernard Chang, George Kalantzis
St. James's University Hospital, Leeds

Introduction: Orbital lesions are common presentations. All lesions presented at the St. James's University Hospital (SJUH) are biopsied.

Purpose: The purpose of this study was to determine the number of orbital biopsies carried out at SJUH, the pathology identified and whether radiological diagnoses coincide with the result from orbital biopsies.

Method: This retrospective study examined all cases between January 2012 and December 2013. The cases and their outcomes were identified from Medisoft software.

Results: There were 26 cases. 14 were female and 12 were male. The mean age was 49 years and radiological reports were available for 15 cases (57.7%). There were 16 cases involving the right eye, 9 on the left and 1 bilateral. There was a vast array of histological outcomes (n=17), with dermoid and lymphomas being the most commonly found (both: n=5, 19.2%). Only 26.7% (n=4) of the radiological reports matched the histological diagnoses and all of these reports were produced by a CT scan.

Conclusion: In comparison to the number of biopsies carried out between 2003 and 2010, the number of orbital lesions presenting at SJUH and therefore, the number of biopsies carried out are increasing. In turn, the workload is increasing. These findings also suggest that in order to make a safe judgement on the nature of a lesion, a biopsy is necessary and the investigation of choice is needed for accuracy. This is in keeping with other studies, which state that radiological diagnoses are not accurate enough for most solid orbital masses.

51. Post-cataract surgery endophthalmitis: incidence and associated factors with subconjunctival antibiotic prophylaxis: a review of 32,982 cases

Jonathan Kirk, Robert Johnston, Kim Titcomb, Ahmed Sallam
Cheltenham General Hospital

Introduction: The European Society of Cataract and Refractive Surgeons (ESCRS) study reported an incidence of postoperative endophthalmitis of 0.073% with intracameral cefuroxime. Sub-conjunctival cefuroxime is the standard of care in the UK and large datasets are needed to determine if it achieves comparable efficacy.

Purpose: To audit the incidence of endophthalmitis after cataract surgery and associated factors in a single unit using solely sub-conjunctival antibiotic prophylaxis.

Method: Data conforming to the Cataract National Dataset was recorded within an electronic medical record (Medisoft) on consecutive cataract operations between 2005 and 2014. Planned combined surgery (e.g. phacoemulsification-trabeculectomy) was excluded. Sub-conjunctival cefuroxime was used in over 99% of cases. Audit tools within Medisoft and microbiology electronic records were used to identify cases of endophthalmitis.

Results: Endophthalmitis occurred in 12 eyes (12 patients) after 32,982 operations, an incidence of 0.0364%. The incidence of endophthalmitis was higher in cases with: posterior capsular rupture (odds ratio 11.60, 95% confidence intervals 2.53-53.05, p-value <0.01); dropped lens matter (OR 96.77, 95%CI 20.81-449.92, p<0.01); ocular comorbidity causing a reason for a guarded visual prognosis (OR 2.47, 95%CI 0.78-7.78, p=0.12); and non-consultant grade surgeon (OR 2.29, 95%CI 0.73-7.23, p=0.16).

Conclusion: Sub-conjunctival cefuroxime prophylaxis in a large real-world cases series achieves a comparable incidence of post-operative endophthalmitis to the intracameral cefuroxime treatment arms of the ESCRS study. Awareness of risk factors should help determine appropriate intra-operative care (e.g. wound suturing) and more frequent follow up of high risk patients.

52. Socioeconomic deprivation & incidence of serious ocular trauma in Scotland

Liying Low, James Hodson, Daniel Morris, Parul Desai, Caroline MacEwen
University of Dundee

Introduction: Serious ocular trauma is defined as 'an injury or wound to the eye or adnaxae caused by external force or violence, which requires admission to hospital for observation or treatment'. Delayed presentation often leads to poor visual outcome.

Purpose: To examine socioeconomic gradients in the incidence of serious ocular trauma in Scotland

Method: Prospective observational study (Nov 2008 – Oct 2009). Cases of serious ocular trauma were identified using the British Ophthalmological Surveillance Unit (BOSU) reporting scheme & detailed questionnaires were sent to reporting ophthalmologists in Scotland.
Using the postcode of residence, we assigned a Scottish Index of Multiple Deprivation (SIMD) score, SIMD quintiles (from the 0-20% most deprived, 20-40%, 40-60%, 60-80%, 80-100% least deprived areas), geographic access score, as well as, estimated time taken to the nearest GP or hospital using either car or public transport for each patient.

Results: Response rate from consultants returning the reporting cards was 77.1%. A total of 104 patients (85.6% male) were reported as being admitted with ocular trauma, mean age of 38.6 years (SD 20.8). There is a trend for increasing incidence of serious ocular injury with increasing socioeconomic deprivation ($p=0.034$). 41.7% of the patients who presented more than 24 hours after incident are from the 0-20% most deprived areas, compared to just 16.7% from the 80-100% least deprived areas. There was no statistical difference in the drive/public transport time to GP practices across the SIMD quintiles. Higher incidence of alcohol-related injuries in patients from more deprived areas ($p<0.001$, Kendall's tau 0.278).

Conclusion: Higher incidence of serious ocular injury is associated with increasing socioeconomic deprivation. Patients from more deprived areas tend to present later and their injuries are more likely to be related to alcohol use. Targeted interventions are needed to address alcohol misuse and inequality in eye health care in deprived areas in Scotland.

53. Adherence to recommended patient selection criteria for ocriplasmin therapy

Shams-Ulislam Ilyas, Edward William James Pritchard, Soha Amar, Yit Yang, Niro Narendran
Wolverhampton Eye Infirmary

Introduction: Intravitreal ocriplasmin provides a potential alternative to vitrectomy for patients with vitreomacular traction (VMT). The National Institute for Health and Care Excellence (NICE) has published guidance (TA297) on patient selection criteria.

Purpose: To estimate the proportion of patients with symptomatic vitreomacular traction and compliance with NICE TA297.

Method: Monocentric, retrospective review of consecutive patients undergoing OCT scans in May and June 2014. Patients with VMT in at least one eye were identified for further data collection on laterality, visual acuity, presence of severe sight symptoms, presence of ERM, macular hole and selected therapy.

Results: A total of 1766 patients had OCT scans, of which 60 had VMT in right (29); left (22) and both (9) eyes. Six patients had coexisting ERM and one patient had coexisting FTMH > 400µm. Only 12/60 patients had severe sight problems due to VMT and satisfied NICE criteria for ocriplasmin, but only four received ocriplasmin therapy.

Conclusion: Only a small proportion of patients with VMT meet the NICE eligibility criteria for ocriplasmin. Despite this only a small number of eligible patients received ocriplasmin therapy, which may reflect a general reluctance amongst clinicians and patients to use this therapy.

54. Are Inflammatory Markers at the Time of Temporal Artery Biopsy Predictive of Diagnostic Outcome? An 8-year retrospective-cohort study

Anna Louise Pouncey, Harry O Orlans, Veronica M G Ferguson
Imperial College NHS Healthcare Trust

Introduction: Prompt treatment of Giant Cell Arteritis (GCA) is crucial, but diagnosis remains a challenge. Temporal artery biopsy, the gold standard, is slow and invasive, whereas inflammatory biomarkers are quick to obtain and can aid clinical acumen.

Purpose: To examine the validity of inflammatory biomarkers as a diagnostic aid, by examining the relationship between inflammatory biomarkers and histological changes consistent with GCA.

Method: An 8-year retrospective cohort study was performed. Temporal artery biopsy reports, demographics, full blood count, erythrocyte sedimentation rate (ESR) and C- reactive protein (CRP) were collected. Blood results were selected if within 25 days of biopsy, and inflammatory biomarkers were defined as raised if above a significant threshold (ESR >50 mm/hour, CRP >24.5 mmol/L). Odds ratio, sensitivity, specificity and Fisher's exact test were calculated.

Results: Of 140 biopsies, 17.9% confirmed a diagnosis of GCA. Raised CRP was suggestive of GCA (p=0.0020, OR 4.97, 95% CI: 1.89 to 13.03, specificity 82%, sensitivity 52.17%), whereas ESR was not statistically significant (p=0.36). ESR and CRP conveyed a specificity of 86.46%, but low sensitivity of 33.33% (OR=3.19, 95% CI: 1.09 to 9.39, p=0.049). Elevated ESR or CRP obtained a higher a sensitivity of 70.83%, but a specificity of 59.48% (OR 3.57, 95% CI: 1.37 to 9.27, p=0.01). White cell count, platelet count and haemoglobin did not have statistically significant results.

Conclusion: CRP was a stronger predictor of GCA than ESR. A combination of raised ESR and CRP was the most specific predictor of GCA, but a low ESR and CRP could not exclude a diagnosis of GCA.

55. A retrospective study of Descemet-stripping automated endothelial keratoplasty (DSAEK) results over twelve months

Jordan Chervenkoff, Sunil James, Venkata Avadhanam, Christopher Liu
Sussex Eye Hospital

Introduction: Descemet-stripping automated endothelial keratoplasty (DSAEK) involves endothelium implantation along part of the corneal stroma, which results in quicker visual rehabilitation than penetrating keratoplasty and obviates the complications related to graft sutures in the later.

Purpose: To report the outcomes of DSAEK in 27 cases from a single centre.

Method: All operations were performed via a temporal scleral tunnel and the pre-cut grafts were inserted using Tan's EndoGlide. Demographic details, pre and post-surgical data, pinhole-corrected visual acuity (VA), donor graft thickness and endothelial cell density (ECD) were recorded for a period of 12 months.

Results: Average patient age at the time of surgery was 72.2 years (range 51-94). Twenty-one had Fuchs' endothelial dystrophy, 4 had bullous keratopathy and 1 herpetic endotheliitis.One patient had a triple procedure (DSAEK, Phakoemulsification and IOL insertion). Mean donor graft thickness was 102 ± 9 micrometres with a mean graft diameter of 8.7 mm (range 8-9 mm) post-trephination. Mean preoperative donor ECD was 2649 ± 236 cells/mm2. At the time of writing, 11 of 18 patients had a VA of 6/12 or better after 12 months. Six eyes (23%) needed rebubbling. Three cases were re-done due to primary graft failure. At the time of writing, the average post-operative ECD at 1,3,6 and 12 post-operative months was 1064, 1032, 943 and 818 cells/mm2, respectively. Three eyes developed postoperative glaucoma requiring long-term medical treatment.

Conclusion: This audit demonstrated DSAEK's potential for quick visual rehabilitation and repeatability with a good success rate.

56. Using EPR to identify eligible patients to implement NICE TA 301 (fluocinolone acetonide, ILUVIEN for diabetic macular oedema [DMO])

Farhat Butt, Saadia Chaudhry, Rehna Khan
Calderdale Royal Hospital

Introduction: Timely implementation of NICE technology appraisals, such as TA 301 (http://www.nice.org.uk/guidance/ta301, accessed 17th November 2014), is an ethical responsibility and an opportunity to enhance patient care. NHS trusts have three months to implement guidance and the strategies across departments vary widely. A proactive methodical approach is required.

Purpose: To utilise the Medisoft audit tool to identify pseudophakic patients with DMO and that were also unresponsive to two consecutive macular laser treatments.

Method: Medisoft audit tool was used to identify suitable patients. The timeframe was between May 2011 and May 2014. Search terms used to identify: i) diabetic patients who had undergone macular laser; and, ii) those diabetic patients in which cataract surgery had been performed. The results from these searches were combined to provide a list of DMO patients that were both pseudophakic and unresponsive to prior laser. Parameters recorded included: demographics, VA, CRT, interventions and coexistent glaucoma.

Results: Data reveal that 24 patients (24 eyes) are suitable for ILUVIEN as this is consistent with its indication. 3 patients (4 eyes) would be suitable for further laser. One of these patients had concomitant ERM thus analysis was difficult.

Conclusion: The use of the Medisoft audit tool helped identify 24 patients suitable for ILUVIEN. Moving forward, we propose using a similar search strategy to aid the implementation of future NICE TAs and to aid the treatment of suitable patients.

CATARACT & REFRACTIVE SURGERY

57. A twisted tale of ocular torsion

Louise Ramskold, Vaishali Lodhia, Alistair Jones, Saurabh Jain
Royal Free Hospital

Introduction: Toric intraocular lenses (IOLs) are being increasingly used to correct corneal astigmatism in cataract surgery. We discuss the first documented case of excyclotorsion causing diplopia following toric IOL implantation.

Purpose: To discuss and raise awareness about the presentation and management of excyclotorsion, a rare complication following toric IOL implantation.

Method: Retrospective case note review and literature search.

Results: A 78 year-old woman presented with one week's history of diplopia. She had undergone bilateral cataract surgery, the right with a toric IOL. On examination, visual acuity (VA) was 6/12 OD and 6/9 OS. She exhibited right hyperphoria (4^ R/L), exophoria (16^ BI) and excyclotorsion measuring 5° in primary gaze. Anterior segment examination demonstrated rotation of the right toric IOL with its axis at 85°, i.e. 20° away from the intended position. The patient underwent urgent repositioning of the toric IOL. Post-operatively, VA improved to 6/6, excyclotorsion reduced to 2° in primary gaze and hyperphoria to 2^ R/L, which she could fuse. At 3-month follow-up, the patient was asymptomatic.

Conclusion: Post-operative rotation of toric IOLs has clinically significant consequences. Rayner T-flex IOLs (as used in this case) have a reported 3.4-5.0° mean rotational stability and 9-21% of these patients have >10° post-operative misalignment. In this case, toric IOL implantation exacerbated a pre-existing asymptomatic torsion, resulting in visual decompensation and subsequent diplopia. Ophthalmologists need to examine for torsion carefully and be aware of the possibility of inducing torsional symptoms following surgery.

58. Propofol Sedation with Peribulbar Anaesthesia for Cataract Surgery

Yamini Krishna, Gediminas Sidaras, Stephen Kaye
Royal Liverpool University Hospital

Introduction: Cataract surgery under local anaesthesia maybe stressful for patients. Sedation may help minimise discomfort, reduce patient anxiety which in-turn may positively influence haemodynamic parameters making surgery safer.

Purpose: To investigate effects of low-dose propofol sedation on haemodynamics, anxiety, pain, satisfaction and needle recall.

Method: A prospective analysis of 97 patients undergoing elective cataract surgery were randomised to receive either no sedation or a single sub-anaesthetic dose of propofol just prior administration of local anaesthesia. Patients' pulse and blood-pressure were noted pre-and-post-operatively and statistically analysed (SPSS). Patient anxiety and pain were measured on a visual-analogue-scale. Patient satisfaction with anaesthetic and recall of block needle were categorically assessed postoperatively.

Results: Data from 97 patients were analysed, 50 of whom had received propofol. There was significant reduction in: mean arterial blood-pressure (11.5mmHg), systolic (15.5mmHg) and diastolic blood-pressure (9.5mmHg) postoperatively in propofol patients ($p<0.05$). In contrast, each of these parameters increased (4.9mmHg; 8.4mmHg and 3.1mmHg, respectively) in non-sedated patients. Pulse-rate dropped postoperatively in both, but more-so with propofol. No adverse events were observed in either group. Although patient anxiety and pain scores were lower during surgery in propofol group, the difference was not statistically significant. Patient satisfaction with the anaesthetic was high in both. Needle recall was much lower in propofol group (36% vs 83%).

Conclusion: Single low-dose of propofol given before the block is safe and effective in relaxing the patient and reducing needle recall. The associated reduction in haemodynamics may reduce risk of adverse events during intraocular surgery.

59. Cataract Surgery in Patients with Learning Disability

Egle Rostron, Rachel Pilling
Bradford Royal Infirmary

Introduction: Patients with learning disabilities (LD) have a higher level of visual impairment compared to general population. Cataract is a reversible cause of such impairment, but many barriers to surgery exist for patients with LD. The Equality Act of 20102 requires organisations to make "reasonable adjustments" in order for those with disabilities to access services, although there is a distinct lack of literature on surgical outcomes and surgical planning strategies for patients with LD.

Purpose: To describe practical ways of improving cataract surgery pathway for patients with Learning Disabilities based on analysis of patients who were treated at our unit.

Method: Case series analysis of five patients with learning disabilities who had phacoemulsification cataract surgery between 2012 and 2013. Data collected retrospectively. Parameters collected included assessment of visual function, adjustments to surgery, pre-operative and post-operative care, and complications.

Results: In a case series of 5 adults with LD who underwent cataract surgery all had improved visual function and independence post-operatively. In some cases this resulted in reduced caring requirements for family and paid carers. Adjustments included pre-operative desensitization to wearing eye shield and having drops, performing surgery and biometry under general anaesthetic, administration of subconjunctival steroids, application of corneal suture. No peri-operative or post-operative complications were found.

Conclusion: Many concerns about patients with learning disabilities undergoing cataract surgery can be addressed by applying reasonable adjustments we present in our poster/presentation.

60. The use of an iris fixated intraocular lens to correct aphakia in the absence of adequate capsular support

Douglas Lyall, Deepa Anijeet, Kanna Ramaesh, Sanjay Mantry
Gartnavel General Hospital, Glasgow

Introduction: Several surgical methods have been described to correct aphakia in the absence of capsular support.

Purpose: To report visual and safety outcomes of an iris fixated intraocular lens implant (IOL) used to correct aphakia in the absence of adequate capsular support.

Method: Non-comparative interventional case series. 18 eyes of 15 patients underwent uncomplicated implantation of the iris fixated IOL (Verisyse ®, AMO). Mean age was 62.9 ±19.1 years. Mean follow-up was 11.7 ±8.2 months.

Results: Indications for surgery were aphakia from previously complicated cataract surgery (n=4), aphakia from other previous ocular surgery (n=3), dislocated IOLs (n=7), significant capsule phimosis and thickening (n=3) and aphakia from previous trauma (n=1). Ocular co-morbidities that could influence visual outcomes included macular pathology, ocular hypertension / glaucoma, uveitis (all n=4), retinitis pigmentosa (n=3), retinal detachment (n=2) and amblyopia (n=2). Nine eyes had fixation of the Verisyse lens alone, while nine had this combined with explantation of the original IOL.

Corrected distance visual acuity (CDVA) improved from 0.92 ± 0.87 (LogMAR) pre-operatively to 0.44 ± 0.49 post-operatively ($p<0.001$). Subgroup analysis of patients without other visually significant ocular pathology found that the mean post-operative CDVA was 0.22 ± 0.18. 80% of these patients achieved 6/12 or better and 60% achieved 6/9 or better.

There were no cases of lens dislocation, corneal decompensation and no cases required IOL explantation

Conclusion: The Verisyse ® IOL offers a safe and effective method to correct aphakia in eyes with inadequate capsular support and in the absence of other ocular pathology offers good visual outcomes.

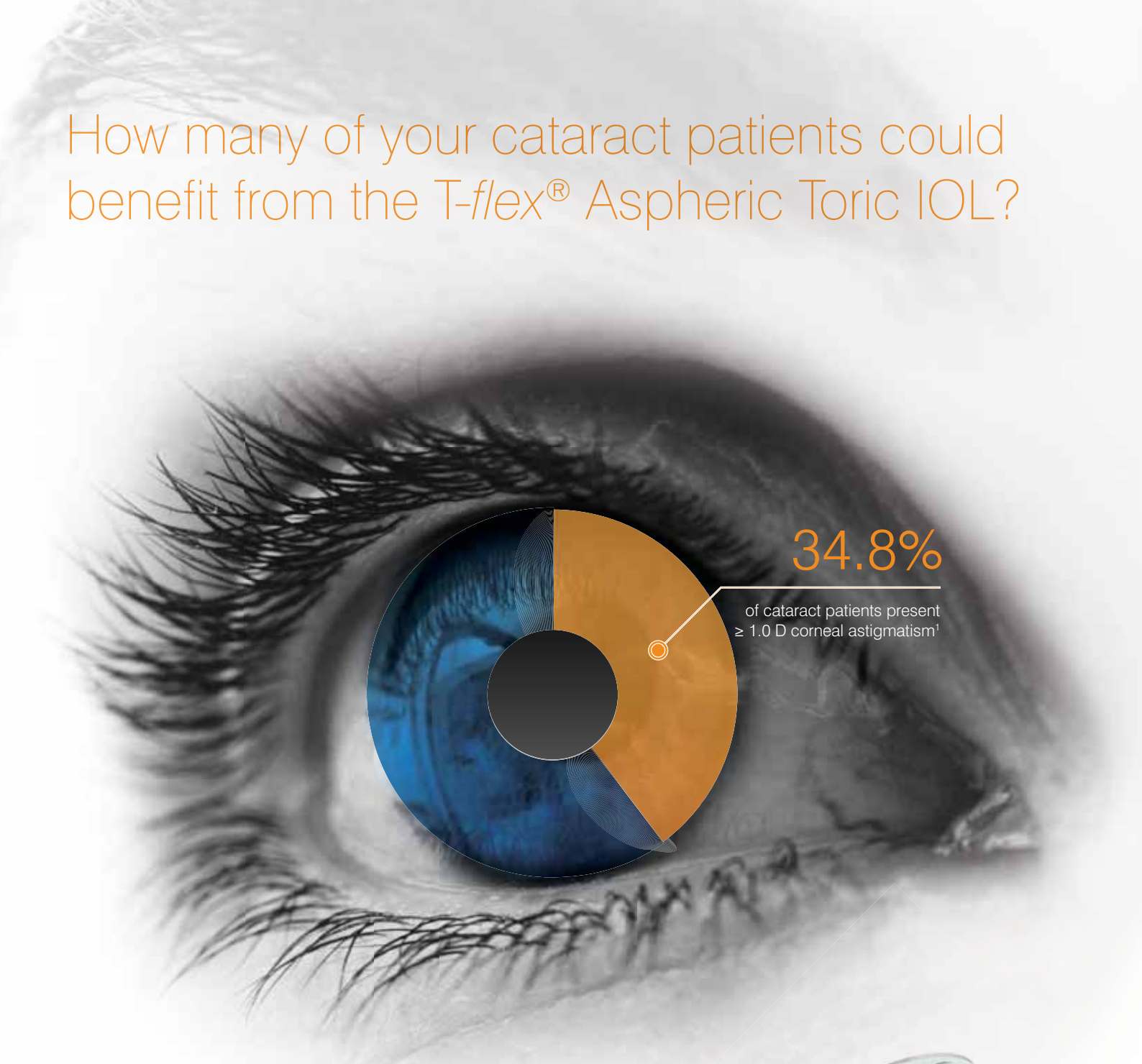
61. Telephone follow-up for cataract surgery: feasibility and patient satisfaction study

Jeremy Hoffman, Caroline Conlon, Caroline Davies, Verity Nicholas, Lucia Pelosini
Surrey and Sussex Healthcare NHS Trust

Introduction: Cataract surgery is the most commonly performed elective procedure in the UK with progressively increasing volumes due to ageing population. Postoperative telephone follow-up (TFU) has been proposed as alternative care pathway in surgical specialties following uncomplicated procedures with low risk of complications.

Purpose: The study investigated the feasibility of a TFU after uncomplicated cataract surgery in low-risk patients and patient satisfaction with this alternative clinical pathway.

How many of your cataract patients could benefit from the T-*flex*® Aspheric Toric IOL?



rayner.com

- Proven rotational stability[2]
- Excellent centration
- Anti-Vaulting Haptic Technology® for excellent fixation within the capsular bag[3]
- Extensive range of sphere and cylinder powers

1. Ferrer-Blasco T1, Monlés-Micó R, Peixoto-de-Matos SC, González-Meijome JM, Cerviño A J Cataract Refract Surg 2009 Jan;35(1): 70-510 1016/j.jcr 2008.09.027
2. Alberdi R et al. J Refract Surg 2012; 28(10); 696-700.
3. Claoué C. Clinical and Surgical Ophthalmology 2008; 26(6): 198-200.

Rayner
Your skill. Our vision.

EC-2015-16 03/15

Medisoft and The Royal College of Ophthalmologists

Raising standards in cataract surgery

The Royal College has selected Medisoft to support the forthcoming national cataract audit.

Medisoft has been commissioned to provide software to NHS cataract services across England and Wales. Our new tools will help you record surgical data and link with patient outcomes captured in the community.

Medisoft are delighted to be working with
The Royal College of Ophthalmologists
to improve standards of care and patient safety.

Visit stand O for further information and a free demonstration
or contact David Johnston on 0113 347 2020
email: info@medisoft.co.uk

The ROYAL COLLEGE of OPHTHALMOLOGISTS

www.rcophth.ac.uk

medisoft

www.medisoft.co.uk

Method: Low-risk patients prospectively identified following uncomplicated cataract surgery received a scheduled TFU appointment 2-3 weeks postoperatively; the TFU interview included a 10-point subjective ophthalmic assessment questionnaire and a 6-point patient satisfaction questionnaire. All patients were offered a further clinic review if required. Exclusion criteria comprised ophthalmic co-morbidities, hearing/language impairment and high risk of postoperative complications.

Results: A total of 50 patients (mean age: 80; age range 60-91) (66% second eye surgery; 34% first eye surgery) received a TFU at 12-24 days (mean: 16 days) postoperatively. Subjective visual acuity was graded as good by 92% of patients; 72% patients reported no pain and 20% reported mild occasional grittiness. Patient satisfaction was graded 8.9 out of 10; 81.6% defined TFU as convenient and 75.5% of patients preferred TFU to routine outpatient review. No additional visits were required.

Conclusion: Postoperative TFU can be suitably targeted to low-risk patients following uncomplicated cataract surgery. This study demonstrated a high patient satisfaction. However, TFU requires a parallel arrangement with community optometrists in order to continue monitoring postoperative refractive outcomes for audit purposes.

62. Outcomes of Correction of High Astigmatism with Rayner Toric Monofocal Intra-Ocular Lens during cataract surgery

Su Ling Young, Yu Han Ong, Aravind Reddy
Aberdeen Royal Infirmary

Introduction: There are very few published studies on the outcomes of correction of high degrees of corneal astigmatism. Rayner Toric T-flex monofocal intraocular lens (IOL) allows for correction of high degrees of astigmatism due to the wide range of IOL powers available.

Purpose: To report outcomes of Rayner T-Flex monofocal toric IOL implantation in patients with high degrees of corneal astigmatism undergoing cataract surgery.

Method: This is a prospective study of patients who underwent Rayner T-Flex toric monofocal IOL implantation during cataract surgery for co-existing corneal astigmatism of more 2.50 dioptres. Pre-operative keratometry, laser interferometry with IOL Master, corneal topography, manifest refraction, post-operative unaided and best-corrected distance visual acuity (UDVA and BDVA respectively), post-operative manifest refraction and residual astigmatism was recorded. Vector analysis was performed using ASSORT software. Data analysis was carried out using Microsoft Excel and IBM SPSS 22.

Results: The pre-operative corneal astigmatism ranged from 2.75 to 6.50 dioptres. The unaided distance visual acuity (UDVA) of 6/6 or better was achieved in 21%, 6/9 or better in 68% and 6/12 or better in 96.42%. The best-corrected distance visual acuity (BDVA) of 6/6 or better was achieved in78%, and 6/9 or better in 100%. Mean post-operative residual astigmatism was 0.76 Diopters. 78% had a residual post-operative astigmatism of less than 1 dioptre.

Conclusion: Rayner T-Flex toric monofocal IOL is highly effective in correcting high degrees of corneal astigmatism during routine cataract surgery.

63. Cataract surgery and the internet; is it a reliable source of information for patients?

Guy Mole, Daniel Sibley
Stoke Mandeville Hospital

Introduction: The internet contains a wealth of information allowing patients to use search engines to find out about their conditions. However as it is largely unregulated and so there is concern regarding the reliability and quality of information available.

Purpose: To assess the reliability and quality of the most commonly researched websites using an independently validated scoring method

Method: The term ‘cataract’ was inputted to three of the most common search engines; Google, Yahoo and Bing. The first two pages (20 websites) were then taken from each which due to considerable overlap between the results from different search engines left 27 websites (seven were not patient information websites and were excluded). Two investigators then scored each websites using the DISCERN instrument to assess for reliability and quality.

Results: Overall all websites scored well with the first investigator scoring an average of 76.2% and the second investigator of 78%. There was however considerable variation with the highest scoring website obtaining 98% and the lowest only 46%. The highest scoring websites were the Royal College of Ophthalmologists, National Eye Institute and Royal National Institute of Blind People. The lowest scoring websites were ‘Optegra’ and ‘Diabetes.co.uk’.

Conclusion: Information on the internet regarding cataract surgery was generally good and provides a valuable source of information for patients. There are however a few websites with poor quality and unreliable information and therefore it is recommended health care professionals are aware of the information available online and direct patients towards reliable sources.

64. Diabetic Retinopathy increases the risk of macular oedema after cataract extraction

Colin Chu, Charlotte Buscombe, Ahmed Sallam, Quresh Mohamed, Robert Johnston
Cheltenham General Hospital

Introduction: Macular oedema is an important cause of reduced vision after cataract surgery and diabetics are regarded as at higher risk.

Purpose: To determine the incidence of macular oedema following cataract extraction in diabetics and the relative risk (RR) from diabetic retinopathy.

Method: An electronic medical record system (Medisoft Ophthalmology) was used to collect the RCOphth's Diabetic Eye Disease and Cataract National Datasets from a single UK centre. Patients were prescribed four weeks of reducing topical steroid and had at least one follow-up appointment after an average of five weeks. A new diagnosis of macular oedema within 90 days of surgery was the primary outcome.

Results: 34,225 consecutive cataract operations between 2005 and 2014 were recorded. Eyes with uveitis, vein occlusion, intraoperative complications, additional procedures or receiving perioperative NSAIDs were excluded. Only diabetic eyes with documented absence of pre-operative macular oedema were included. The incidence of macular oedema in non-diabetics was 0.71% (138 of 19,406) and 3.42% (47 of 1373) in diabetics as a group. Diabetic eyes without retinopathy had a RR of 2.48 (95% CI, 1.41-4.35) compared to non-diabetics. The RR from mild to moderate non-proliferative diabetic retinopathy (NPDR) was 6.15 (95% CI, 3.95-9.56) and 12.05 (95% CI, 4.03-36.02) from severe NPDR. Patients with regressed proliferative retinopathy and PRP scars had a RR of 5.80 (95% CI, 2.19-15.36).

Conclusion: This is the largest UK retrospective study of post-operative macular oedema in diabetics and it supports the need for careful management and additional treatments.

65. Wavefront-optimised VERSUS Topoguided Ablation for LASIK in Myopia: A Contralateral Eye Study

Anand Pasari, Arun Kumar Jain, Chintan Singh, Partha Chakma
Advanced Eye Centre, PGIMER, Chandigarh, India

Introduction: Different ablation profiles are available for ablation in LASIK. Do these profiles have a relevance in clinical outcomes is not clearly known.

Purpose: To compare the outcomes of wavefront-optimized and topography guided treatment in fellow eyes of patients having laser in situ keratomileusis (LASIK)for myopia

Method: This prospective comparative study comprised 20 patients who had wavefront-optimised(WO) LASIK in 1 eye and topography- guided(TG) LASIK in the fellow eye. The IntraLase iFS(Abbott Medical Optics) was used to create a superior-hinged flap and the MEL80 Excimer Laser (Carl Zeiss MeditecAG), for photoablation. The WASCA analyzer(Carl Zeiss Meditec AG) was used to measure ocular wavefront aberrations and the Functional Acuity Contrast Test(FACT) chart, to measure contrast sensitivity before and 1week,1month and 3 month after LASIK. The refractive and visual outcomes and the changes in aberrations and contrast sensitivity were compared between the 2 treatment modalities.

Results: Preoperative mean spherical equivalent refraction was -4.22± 1.22D and -4.381±1.30D in wavefront – optimised and topographthy- guided groups, respectively. At three months , 95%of eyes in the wavefront-optimised group and 100% in the topography-guided group had uncorrected visual acuity of 20/20 or better; there was no statistical difference in the number of patients who had postoperative spherical equivalent refraction of ± 0.5D . Higher order aberrations increased from 0.26±0.06 µm (range: 0.17 to 0.44 µm) and 0.24±0.07 µm (range: 0.13 to 0.40µm) to 0.44±0.16 µm (range: 0.18 to 0.73 µm) and 0.38±0.12 µm (range: 0.20 to 0.64 µm) in the wavefront-optimized and topography guided groups, respectively. Contrast sensitivity did not decrease in either group and no statistically significant differences between groups were noted.

Conclusion: Although both wavefront-optimized and topography-guided lasik gave excellent refractive correction results, the later induced fewer higher-order aberrations and better results in terms of contrast sensitivity.

66. Exploring the association between gender and pre-operative visual acuity in patients undergoing cataract surgery

Obeda Kailani, Zaid Shalchi, Omar Mahroo, Christopher Hammond, Genevieve Larkin
King's College Hospital

Introduction: Gender has been shown to have an effect on likelihood of seeking healthcare, with males shown in some studies to be less likely to seek medical attention.

Purpose: We explored whether pre-operative visual acuity differed between males and females undergoing cataract surgery in a large London teaching hospital.

Method: Details of all cataract operations performed over 10 years to October 2014 were obtained from the King's College Hospital Medisoft electronic patient record. Pre-operative corrected distance visual acuity (CDVA) was compared between males and females (unpaired two-tailed Student t-test). All patients aged over 50 years were included. Eyes with a history of previous retinal detachment surgery were excluded.

Results: Over the study period, 28,912 cataract extractions meeting the inclusion criteria were performed (female, 17,333 [60.0%]). Mean±SD pre-operative CDVA was better for females (logMAR 0.62±0.50) than males (logMAR 0.65±0.54) (p=0.0001). Subgroup analysis revealed significantly better pre-operative CDVA in females than males in the 50-54 years and the 55-59 years age groups (p=0.001 and p=0.0001, respectively), but not in older groups (p>0.05).

Conclusion: In this cohort, pre-operative visual acuity was worse for males than females undergoing cataract surgery. The effect was particularly obvious in younger patients of working age. This may be a result of differences in health-seeking behaviour between the sexes.

67. Human Factors Training for Cataract Theatre Teams

Polly Dickerson, James Innes
Hull and East Yorkshire Eye Hospital

Introduction: Whilst cataract surgery is the most performed operation worldwide, there is to date no specific human factors scenario training for cataract theatre teams. There is precedent in other specialties for using immersive multidisciplinary scenario based simulation to provide this training.

Purpose: We have designed an in-situ immersive simulation for cataract theatres, including microscope adaptation, scenarios and specific debriefing aims for all professional groups.

Method: An ophthalmic specialty trainee, consultant, scrub nurse, operating department personnel and "runner" are briefed in simulation and asked to enter ophthalmic theatres to perform a cataract operation. Theatre is set up for phacoemulsifcation with an adapted microscope to show selected video, a model head where surgeon's hands would rest and an actor on the operating trolley. Proceeding are videoed. After the scenario, structured team debriefing is performed by trained facilitators.

Results: Results for similar courses with anaesthetic teams suggests this approach is acceptable to participants, leads to increased awareness of team behaviours and a reduction in authority gradients. We also expect to find latent errors by running the scenarios in situ.

Conclusion: Improving awareness of non-technical skills is especially important for improving the experience of our awake ophthalmic patients. Immersive simulation with actors simulating patients, working with whole teams is an effective method for transferring these skills and is now available for cataract theatre teams. Future work would seek to use adapted tools (e.g Non-Technical Skills for Surgeons) to rate behaviour in the workplace before and after such training to demonstrate its effect.

68. Wrong IOL Events – A Review of incidents reported to the National Reporting and Learning System: 2010-2014

Laura Steeples, Melanie Hingorani, Declan Flanagan, Simon Kelly
Manchester Royal Eye Hospital; Moorfields Eye Hospital; Royal Bolton

Introduction: Wrong intraocular lens (IOL) implant surgery is a significant adverse event and is a 'never event.' Despite the introduction of mandatory surgical checklists, such errors continue to occur in cataract care. It is possible that these incidents are under-reported.

Purpose: To identify the causal factors in wrong IOL events from a national dataset and compare with similar historical data (2003-10) prior to mandatory checklist use, for the purpose of developing strategies to prevent never events.

Method: Wrong IOL patient safety incidents (PSIs) submitted to the National Reporting and Learning System (2010-2014) were reviewed by thematic analysis.

Results: 178 wrong IOL PSIs were identified. The contributory factors included: transcription errors (n=26); wrong patient biometry (n=21); wrong IOL selection (n=16); IOL implanted was intended for a different patient (n=15);

incorrect IOL brought into theatre (n=11); left/right eye selection errors (n=9); communication errors (n=9); and positive/negative IOL power errors (n=9). In 44 PSIs, no causal factor was reported, limiting the learning value of such reports. 45 reports indicated IOL exchange surgery was performed. Errors were detected intra-operatively (n=9), at the end of surgery (n=52), post-operatively (n=64) and not specified in 53 cases.

Conclusion: The selection and implantation of the correct IOL is a complex process which is not adequately addressed by existing checking procedures. Human or behavioral factors are heavily implicated in IOL selection errors. Novel approaches, including simulation training, may be required to reduce such errors further. There is scope to improve root causation description in reporting to enhance the learning value of the process.

69. Corneal indocyanine green angiography to guide medical and surgical management of corneal neovascularization.

Bernhard Steger, Vito Romano, Mark Batterbury, Colin Willoughby, Sajjad Ahmad, Stephen Kaye
Royal Liverpool University Hospital

Introduction: Conventional methods to evaluate CoNV such as slit lamp biomicroscopy or computer assisted color image analysis, although helpful, do not allow sufficient appreciation of details on vessel extent, localization, leakage, origin and differentiation of the afferent and efferent systems. This information is of importance for guidance of clinical judgment and treatment

Purpose: To illustrate the benefit of ICG angiography to guide clinical assessment and surgical treatment of patients with complex corneal neovascularization.

Method: A case series of three patients with corneal neovascularization is presented.

Indocyanine green corneal angiography (ICGA) was performed, firstly, in a case of corneal choristoma with recurrent lipid exudation into an intrastromal cleft from corneal neovascularization; secondly, in a case of corneal scarring and CoNV due to microbial keratitis on a penetrating corneal graft; thirdly, in a case of CoNV after deep anterior lamellar keratoplasty.

Results: In the first case, angiography helped to identify and treat feeding vessel and stop leakage. In the second case, it was possible to eliminate neovascular vessels on the graft by angiography-guided fine needle diathermy. In the third case, angiography revealed the location of CoNV in the host-graft-interface after deep anterior lamellar keratoplasty.

Conclusion: ICGA is a feasible diagnostic tool to guide medical and surgical management of CoNV by enabling the localization of vessel depth and topography.

CORNEA & EXTERNAL EYE DISEASE

70. 12 month results of KeraRing Intrastromal Corneal Ring Segments for Keratoconus

Caroline Wilde, James Ball
St James Hospital, Leeds

Introduction: Keratoconus is a progessive corneal ectasia characterised by protrusion and apical thinning. Intrastromal ring segments were approved by NICE in 2007 and improve corneal shape and vision.

Purpose: To evaluate the safety and efficacy of KeraRing intrastromal corneal ring segment implantation and assess complications.

Method: A retrospective case series including 67 eyes of 61 patients with keratoconus. Corneal tunnels were created using the Visumax femtosecond laser and a Keraring was implanted in each eye. A complete ophthalmic evaluation was performed preoperatively and at 12 months postoperatively including visual acuity, refraction and keratometric readings.

Results: 11 of 67 eyes (16.4%) had an uncorrected visual acuity of 6/12 or better preoperatively compared to 22 (32.8%) at 12 months. 45 of 67 eyes (67.2%) had a best corrected visual acuity of 6/12 or better preoperatively which increased to 55 (82.1%) at 12 months.
There was a significant reduction in sphere -5.40 +/- 4.20 to -3.14 +/- 4.05 ($p<0.0001$) and cylinder 6.00 +/- 3.04 to 3.46 +/- 2.32 ($p<0.0001$). The mean preoperative maximum keratometry was 52.65 +/- 5.37 D and decreased to 50.43 +/- 5.38 D ($p=0.0001$) at 12 months.
Complications included dry eye (n=2) and glare (n=2). One Keraring was repositioned and 4 were removed; 2 due to no subjective or improvement in visual acuity, 1 due to inflammation and 1 due to glare symptoms.

Conclusion: Keraring implantation is a safe and effective treatment for keratoconus.

71. A study of corneal dystrophies in conjunction with the British Ophthalmic Surveillance Unit (BOSU).

Salina Siddiqui, Corneal Dystrophy BOSU Study Team, Barny Foot, Kamron Khan
Leeds Institute of Molecular Medicine

Introduction: Corneal dystrophies are a heterogeneous group of genetically determined, non-inflammatory diseases that are in the majority of cases limited to the cornea. Whilst progress has been made in our understanding of the molecular mechanisms that underlie these phenotypes, this has not yet translated into improved clinical management.

Purpose: This study aims to advance our knowledge of the epidemiological aspects of corneal dystrophies as there are currently no national studies in this field.

Method: New cases of young onset corneal dystrophies were ascertained through the BOSU population based surveillance system at the Royal College of Ophthalmologists, for 24 months from November 2011.

Results: 73 cases were reported to BOSU, resulting in 27 unique cases being identified with completed questionnaires. 48% were female with a mean age at presentation of 12 years. 85% were Caucasian. In nearly half of the cases another family member was also known to be affected. Epithelial dystrophies (44%) represented the largest majority, followed by endothelial dytophies (33%) then stromal dystrophies (19%). In one case (4%) a clinical diagnosis couldn't be made and further diagnostic genetic investigations were requested. In 74% of cases slit lamp ophthalmoscopy was sufficient for diagnosis, otherwise additional anterior segment imaging, histological or genetic testing was also requested. The most frequent form of management was observation with provision of artificial lubricants. Surgical intervention was required in three cases of posterior polymorphous endothelial dystrophy.

Conclusion: Corneal dystrophies are extremely rare and this study would suggest a minimum UK incidence of 6.7 cases per 10 000 000 population per annum.

72. Identification of Corneal Endothelial Cell Migration using Fluoresence In Situ Hybridization

Kanna Ramaesh, Douglas Lyall, Fiona Roberts
Gartnavel General Hospital, Glasgow

Introduction: Corneal transparency is dependent on the endothelial monolayer. The migratory capacity of this layer is not fully understood.

Purpose: To provide in vivo evidence of corneal endothelial cell migration in healthy corneal endothelium using fluorescence in situ hybridization (FISH).

Method: Case Report. A 18-year-old male with keratoconus underwent penetrating keratoplasty(PK) with a gender-mismatched graft in 1981. 33 years later, the patient developed recurrence of the ectasia within the graft and underwent repeat penetrating keratoplasty. There was no clinical evidence of corneal endothelial failure at the time of surgery. Pre-operatively, the patient had confocal microscopy of the corneal endothelium performed. Histopathological analysis of the corneal button from the original graft included FISH analysis of the sex chromosomes of the corneal endothelium.

Results: Pre-operative confocal microscopy showed a healthy corneal endothelium with regular cell morphology. FISH of the endothelial cells showed the presence of both male (XY) and female (XX) endothelial cells. XY cells were in the majority with an average ratio of 7:3. The gender mismatch of male XY cells on a female donor graft suggests these were host endothelial cells that migrated onto the donor endothelial surface.

Conclusion: This case provides direct evidence of the centripetal migratory capacity of endothelial cells in the human corneal endothelium monolayer in the absence of any endothelial disease or reduced cell density. Such information is useful to future research investigating the endothelium, particularly after corneal transplantation, when understanding cell migration may be beneficial in the context of endothelial rejection and graft survival.

73. Patient experience of cultured limbal epithelial transplantation - development of a Quality-of-Life based outcome assessment questionnaire

Derek K-H Ho, Carol Porteous, Richard Cable, Catey Bunce, Alex Shortt
Moorfields Eye Hospital

Introduction: Corneal limbal stem cell deficiency (LSCD) is a debilitating disease. Over the past decade a new laboratory-based technique of cultured limbal epithelial transplantation has been developed as part of the surgical management. To date, outcome measures for this treatment have largely been based upon subjective clinical judgement.

Purpose: To bring clinicians and patients together to develop a questionnaire tool for the qualitative evaluation of LSCD severity and the impact of treatment.

Method: Using a Delphi approach, LSCD experts were interviewed to determine which components of the NEI-VFQ and ADVS questionnaires they considered relevant to LSCD patients. A focus-group meeting was held where LSCD patients shared their experiences with the disease. Thematic analysis was performed on the meeting transcripts.

Results: The Delphi exercise with LSCD experts resulted in several long-listed questions, which served as a framework in the patients discussion. Thematic analysis revealed key QOL indicators and helped develop the provisional LSCD-QOL questionnaire. These key themes included: co-morbidities and symptoms; depth perception; daily activities; public transportation; independence, psycho-social and emotional impact and future concerns. This LSCD-QOL questionnaire is currently being validated in a cohort of 30 LSCD patients.

Conclusion: The use of Patient-Reported-Outcome-Measures encourages patient involvement in care, allows better clinical decisions by doctors and facilitates evidence-based resource allocation by healthcare authorities. Once validated, the LSCD-QOL tool will provide qualitative measurement of the impact of LSCD on patients lives, and an unbiased gauge of disease progression and intervention effectiveness.

74. Quantification and Assessment of Patient Symptoms Following Corneal Collagen Cross-linking in the Management of Keratoconus

Humera Sarwar, Doulas Lyall, Deepa Anijeet, Kanna Ramaesh, Sanjay Mantry
Gartnavel General Hospital, Glasgow

Introduction: Corneal collagen cross-linking has been identified as a treatment option in the management of selected patients with keratoconus.

Purpose: To quantify patient pain following “epithelium-off” corneal collagen cross-linking, and to identify risk factors for pain in patients with progressive moderate to severe keratoconus.

Method: Prospective single-centred non-comparative case series. 12 eyes of 11 patients (ten male) who underwent “epithelium-off” corneal collagen cross-linking were asked to score their pain and impact on day-to-day activities on the day of the procedure, and at days two and seven. All patients had a bandage contact lens inserted at the end of the procedure.

Results: The mean age of the cohort was 22 years. Pre-operative mean average keratometry reading was 49.60D ±3.57D, mean astigmatism was 7.75D ±4.88D and mean central corneal thickness was 526 ±51 microns.

Pain score (range 0-10) was worst on day of the procedure (8.2 ±1.8) compared to days two (5.8 ±2.3) and seven (1.7 ±3.1) ($p<0.01$). Patients had more difficulty using their mobile phone following the procedure compared to computer use and watching television. Nine patients required oral analgesia at day zero, eight at day two and two at day seven. Pre-operative topographical parameters were not found to predict the severity of post-procedural pain.

Conclusion: "Epithelium-off" corneal collagen cross-linking is associated with significant pain on the day of the procedure, often requiring systemic analgesia. Pain is significantly less but still present at day two and nearly completely resolved by day seven. All patients should be warned of this prior to undergoing the procedure.

75. Long-term Outcomes of Deep Anterior Lamellar Keratoplasty in Patients with Keratoconus

Kelvin Cheng, Douglas Lyall, Sanjay Mantry, Kanna Ramaesh
Gartnavel General Hospital, Glasgow

Introduction: Deep anterior lamellar keratoplasty (DALK) selectively replaces diseased corneal stroma while preserving the patient's healthy endothelium.

Purpose: To report long-term visual outcomes, complications and graft survival of patients undergoing DALK to treat keratoconus.

Method: Retrospective case record review of all patients who underwent DALK to treat keratoconus at a single centre between February 2000 and September 2010. 94 eyes of 77 patients were included. Data was collected on unaided (UDVA) and corrected (CDVA) visual acuity, refractive outcomes, graft survival, complications and subsequent procedures.

Results: Mean UDVA was 0.67 ±0.37 (LogMAR) and CDVA was 0.29 ±0.20. Average mean spherical equivalent was -3.19D ±4.24D and mean refractive cylindrical error was 3.68D ±2.10D. There were four cases of graft rejection (4%), and four cases of graft failure (4%). Nine patients (10%) developed raised intraocular pressure requiring topical therapy. Three patients (3%) underwent subsequent cataract extraction and lens implant, two (2%) underwent astigmatic keratotomy. Three patients (3%) underwent repeat corneal graft.

Conclusion: DALK is a successful form of corneal transplantation to treat patients with keratoconus. This study provides long-term data showing that patients with more than four years follow up maintain good visual and refractive outcomes. Graft survival rates maintain high after longer-term follow up.

76. Amnion-assisted Conjunctival Epithelium Redirection (ACER)

Mohamed Elalfy, Harminder Dua
Nottingham University

Introduction: Limbal stem cell transplantation (LSCT) is often complicated postoperatively by corneal conjunctivalization which guards the prognosis. Sequential Sectoral Conjunctival Epitheliectomy (SSCE) is an easy technique used postoperatively to avoid conjunctival growth onto the cornea, but it requires frequent follow-up visits with added postoperative pain and discomfort.

Purpose: To describe a new technique for redirecting the repopulating conjunctival epithelium, away from the corneal surface after LSCT in limbal stem cells deficiency (LSCD) patients, allowing the corneal epithelium to grow and cover the defect without the need to perform SSCE.

Method: The technique was performed in 12 eyes of 12 patients with LSCD. The limbal grafts were obtained by autografting in 5 eyes and allografting in 7 eyes. Two layers of amniotic membrane were placed on the corneal surface after removing the fibrovascular tissue and performing 360 degree periotomy; the inner layer epithelial side up facing that of the outer layer which is tucked under the conjunctival edge, redirecting the growing conjunctival epithelium to a different plane away from the corneal epithelium growing from the limbal grafts beneath the outer layer. The outer layer was removed after 4weeks. Patients were followed-up in the outpatient clinic and photos were taken on each visit.

Results: All corneas showed complete healing after the removal of the outer layer of amniotic membrane with no signs of conjunctivalization. Slit-lamp examination of the cornea showed smooth and regular surface with no fluorescein staining.

Conclusion: Using this technique allows corneal reepithelization from limbal grafts without conjunctivalization without the need to perform SSCE, decreasing the patient's discomfort and frequency of follow-up visits. When the ocular surface settles, another procedure like penetrating keratoplasty can be performed to achieve even clearer corneal surface.

77. Effect of intraocular pressure and corneal drying on corneal thickness

Vito Romano, Bernhard Steger, Mark Batterbury, Sajjad Ahmad, Colin Willoughby, Ahmed Elsheikh, Stephen Kaye
Royal Liverpool Univerity Hospital

Introduction: The key role for endothelial keratoplasty is the preparation of corneal donor graft. In order to achieve a better visual outcome, quality of the stromal interface and posterior lenticule stromal thickness play crucial importance.

Purpose: To investigate the effect of intraocular pressure and corneal drying on corneal thickness.

Method: Corneoscleral discs were placed in an artificial anterior chamber and the epithelium removed. The pressure in the anterior chamber (15mmHg, 45mmHg, 92mmHg, 109mmHg and 198mmHg) was controlled using the height of an infusion bottle and a clamp. Corneas were kept exposed or the anterior surface dried at 1minute intervals using cellulose spears. The endothelium was removed in one group of corneas. 3 corneas were used for each condition. Central corneal thickness was measured independently by two observers every 90 seconds for the first 15 minutes and every 5 minutes for the next 10 minutes using an ultrasound pachymeter (SP-100, Tomey).

Results: There were significant inverse linear relationships between corneal thickness and intraocular pressure and corneal drying. Controlling for pressure, drying led to a significant increase in the rate of corneal thinning. Removal of corneal endothelium reduced the rate of corneal thinning.

Conclusion: Increasing intraocular pressure and corneal drying reduce corneal thickness. These conditions can be used to thin a cornea by a predicted amount prior in order to prepare a cornea for endothelial keratoplasty.

78. Long-term Safety and Efficacy of Intrastomal Corneal Ring Segments in the Management of Keratoconus

Manvi Sobti, Deepa Anijeet, Douglas Lyall, Bernie Hegarty, Eric Newcott, Kanna Ramaesh, Sanjay Mantry
Gartnavel General Hospital, Glasgow

Introduction: Intrastromal corneal ring segments (ICRS) have been identified as a treatment in the management of keratoconus in selected patients.

Purpose: To evaluate long-term safety, visual and refractive outcomes of ICRS implants in patients with keratoconus.

Method: Retrospective single centre non-comparative case series. 18 eyes of 16 patients with keratoconus underwent ICRS implantation (INTACS). Mean follow up was 40 ±21 months. Eight patients were male. Seven patients had a history of atopy.

Results: Mean pre-operative corrected distance acuity CDVA was 0.52 ±0.44 (LogMAR), mean spherical equivalent (MSE) was -6.05D ±5.53D and mean refractive cylindrical error was 5.58D ±3.82D. Mean pre-operative corneal astigmatism was 5.55D ±2.92D.94% of patients had become intolerant to contact lens wear. Eight patients had one ring segment inserted and ten had two segments based on topographical data. At one year, CDVA was 0.20 ±0.26 ($p<0.05$), MSE was 0.10D ±7.71D and refractive cylindrical error was 4.29D ±2.30D. 55% of patients were able to achieve their CDVA with a contact lens. Post-operative corneal astigmatism was 4.49D ±3.14D. INTACS required removal in six patients. This was associated with patients with higher pre-operative keratometry values. Five patients (28%) required eventual corneal transplantation.

Conclusion: ICRS can result in an improvement in corrected visual acuity in patients with mild to moderate keratoconus and can allow more patients to achieve this with contact lens wear. However, due to the risk of ICRS removal in patients with more advanced keratoconus, INTACS should be considered primarily in milder cases alongside, or in combination with, other treatment modalities for keratoconus such as corneal collagen cross-linking.

GLAUCOMA

79. Non-penetrating glaucoma surgery following failed trabeculectomy

Sohraab Yadav, Achini Makuloluwa, Anshoo Choudhary
Royal Liverpool University Hospital

Introduction: Failed trabeculectomy is traditionally managed by using aqueous shunts or augmented trabeculectomy. Deep sclerectomy, by removing the diseased meshwork and establishing conventional flow, offers an alternative.

Purpose: To assess outcomes of deep sclerectomy in eyes with a previously failed trabeculectomy.

Method: Consecutive prospective analysis of all patients with inadequate intraocular pressure (IOP) control and a previous failed trabeculectomy who then underwent deep sclerectomy in the same eye between 2010 and 2014. Surgery was performed without antimetabolites or intrasclereal implants.

Results: 21 patients (mean age 74.1 years) met the inclusion criteria. As well as failed trabeculectomy, other high risk characteristics for filtration failure included: Afro-Caribbean race (3 patients), pseudophakia (11 patients) and age <50 years (1 patient). 12 patients had advanced visual field loss (mean deviation worse than -12dB). Pre-operative IOP changed significantly from 22.6±4.2mmHg (mean ± SD) to 14.2±3.4mmHg at 1 month, 14.6±3.4mmHg at 3 months, 14.6±2.5mmHg at 6 months, 16.6±5.1mmHg at 12 months and 16.0±2.9mmHg at 24 months ($p<0.001$). The mean IOP was reduced by 35.6% at final follow-up. The mean number of glaucoma medications was reduced from 3.3 pre-operatively to 0.8 at final follow-up. Qualified success (IOP ≤21mmHg with/without topical medication) was achieved in 100% of patients until final follow-up. Complete surgical success (IOP ≤21mmHg with no glaucoma medications) was achieved in 74% at 1 month, 65% at 6 months, 66% at 12 months and 60% at 24 months. There were no early or late complications.

Conclusion: Deep sclerectomy is a safe and effective option following failed trabeculectomy.

80. Peripheral Iridotomies – Have We Got it Wrong?

Wen Wei Woo, Wee Ching Ngu, Nicholas Kloster Wride, Scott George Fraser
Sunderland Eye Infirmary

Introduction: New visual symptoms following laser peripheral iridotomy (LPI) are well documented but a disabling streak of light across the patient's visual field (linear dysphotopsia) seems to be the most specific and problematic.

A recent randomised control trial has reported that superiorly placed LPI are at higher risk of linear dysphotopsia compared to those placed temporally.

Purpose: A retrospective study of prophylactic peripheral iridotomy placement and prevalence of linear dysphotopsia in patients with occludable angles.

Method: Consecutive patients with previous prophylactic LPI attending Sunderland Eye Infirmary (SEI) over a 6 week period (March – April 2014) were included.

LPI placement, exposure and lid position were noted on slit lamp examination. Presence of new onset linear dysphotopsia following LPI was also recorded.

Results: There were 183 LPI in 144 eyes of 76 patients (mean age - 66.7 yrs).

145 (79.2%) LPI were placed superiorly and 37 (20.2%) were either temporal or nasally placed. The remaining LPI was placed inferiorly.

2 (2.6%) patients reported linear dysphotopsia. Both patients had superior LPI that were partially covered by the eyelids.

Conclusion: The majority (79.2%) of LPI performed at SEI are placed superiorly.

Our reported linear dysphotopsia prevalence of 2.6% is comparable to previous studies and is significant considering the number of LPI performed.

We feel that there may be a case for performing LPI temporally or nasally in order to reduce linear dysphotopsia rates.

We also suggest a higher threshold for performing LPI and that patients are carefully counselled before undergoing this procedure.

81. Early results of a minimally-invasive, ab-interno gelatin stent in combination with a preoperative mitomycin C injection for the treatment of glaucoma

Albena Dharzikova, Ejaz Ansari
Maidstone and BMI Sommerfield Hospital

Introduction: Can you achieve an effective reduction in IOP and reduce the amount of patients dependent on IOP lowering eye drops?

Purpose: To establish the safety and efficacy of a minimally-invasive ab-interno gelatin stent in combination with a preoperative mitomycin C injection in reducing IOP and glaucoma medications in patients presenting with glaucoma. Mean IOP, IOP change, reduction in medications, and safety were recorded in 74 subjects through 9 months.

Method: In this prospective, non-randomized, multi-center evaluation, safety and efficacy parameters were evaluated using IOP, visual acuity, and assessment of complications. In combination with cataract surgery or as a standalone procedure, a trans-scleral gelatin stent is placed through a corneal incision using a preloaded injector.

Once in place, the permanent implant is designed to connect the anterior chamber to the subconjunctival space, thereby creating diffuse dispersion of aqueous while bypassing potential outflow obstructions. Effectiveness was assessed by comparing baseline IOP and glaucomatous medications to postoperative values through 9 months.

Results: No serious adverse events were reported, and no patients were converted to another surgical glaucoma procedure through 9 months. The mean preoperative (best medicated) IOP was 22.3 mmHg. The mean postoperative IOPs were: 15.4 at 3 months, 14.1 at 6 months, and 13.9 at 9 months. The mean decrease in IOP was -6.9 (-31% reduction) at 3 months, -8.2 mmHg (-37% reduction) at 6 months, and -9.0 (-38% reduction) at 9 months. At 3 months IOP lowering medications were reduced by 84% from the preoperative mean of 3.2 (patients not washed out pre-surgery), 66% at 6months and 78% at 9 months.

Conclusion: The clinically proven ab-interno subconjunctival pathway (i.e. trabeculectomy and tube surgeries) combined with the minimally invasive conjunctiva sparing approach of this broadly adoptable implant procedure may provide a safe and effective approach to controlling IOP and reducing medications in patients with glaucoma.

82. Prior rates of visual field loss in glaucomatous patients undergoing trabeculectomy

William S Foulsham, Lanxing Fu, Andrew J. Tatham
Princess Alexandra Eye Pavilion, Edinburgh

Introduction: Trend-based analyses examining rates of visual field loss in glaucoma are useful for predicting risk of vision-related morbidity. Although patients with faster losses are more likely to require treatment escalation, little is known about rates that might trigger the clinician's decision to intervene surgically.

Purpose: To investigate prior rates of visual field progression in glaucoma patients attending for trabeculectomy.

Method: A retrospective analysis of 112 eyes of 80 consecutive patients with glaucoma attending for trabeculectomy, including 30 patients referred from general ophthalmology clinics and 50 patients from specialist glaucoma clinics. Rates of change in standard automated perimetry mean deviation were examined using linear regression and random coefficient models.

Results: Mean age at surgery was 63.9 ± 10.5 years. Patients were followed for 5.9 ± 3.4 years prior to surgery with 6.6 ± 2.6 useable fields per eye. Accounting for possible confounding factors, patients referred from general clinics lost 1.06 dB per year compared to 0.78 dB per year in those referred from glaucoma clinics (P=0.070). Patients referred from general clinics had more medication changes prior to surgery (3.1 ± 1.5 versus 2.5 ± 1.4, P=0.018).

Conclusion: Patients attending for trabeculectomy had faster average rates of field loss prior to surgery than published values for the general glaucoma population. Those managed by glaucoma specialists had fewer changes in medication and tended to slower rates of visual field loss, although the latter did not reach statistical significance.

83. Connective Tissue Growth Factor and Tissue Inhibitor of Matrix Metalloproteinase-2 in Patients with Exfoliative Glaucoma

Asaad Ahmed Ghanem, Lamiaa F Arafa, Ayman El-Baz
Mansoura University

Introduction: Exfoliatve glaucoma (XFG) is a clinically significant ocular disorder of pseudoexfoliation syndrome which is characterized with progressive accumulation of an abnormal extracellular fibr-illar material in the juxtacanalicular tissue of the meshwork that is considered to be the primary cause of chronic pressure elevation in eyes with XFG

Purpose: To investigate the aqueous humor levels of connective tissue growth factor(CTGF), matrix metalloprotinease-2(MMP-2), and tissue inhibitor of matrix metalloprotinease-2(TIMP-2) in human eyes with exfoliative glaucoma, primary open-angle glaucoma, and senile cataract patients.

Method: Sixty patients with glaucomas and twenty five patients with senile cataract of matched age and gender were enrolled in the study prospectively. Patients were classified into three groups; group I comprised 30 patients with exfoliative glaucoma (XFG), group II comprised 30 patients with primary open-angle glaucoma (POAG), and group III comprised 25 patients with senile cataract (controls). Aqueous humor samples were obtained by paracentesis at the time of elective surgery for glaucomatous and cataractous patients. CTGF, MMP-2, -and TIMP-2 were measured in aqueous humor by specific enzyme linked immunosorbent assay(ELISA) kits, and total aqueous humor protein content assessed by lowry method

Results: There were significant increase in aqueous humor levels of CTGF and TIMP-2 in XFG patients compared to the corresponding values of POAG patients or controls. The MMP-2 aqueous humor level was significant increase in the XFG patients when compared with controls (P<0.001). Moreover, the total protein level in aqueous humor of eyes with the XFG patients was significantly higher than in POAG patients or controls (P,<0.001). A positive correlation was found between CTGF and MMP-2 in aqueous humor samples of XFG patients (P<0.001).

TEAM BIMATOPROST

TOUGH

LUMIGAN®
(bimatoprost ophthalmic solution) 0.01% and 0.03%

GANfort®
(bimatoprost/timolol ophthalmic solution) 0.03%/0.5%

but gentle[1-10]

Prescribing information can be found overleaf.

UK/0104/2015 Date of Preparation: February 2015

ALLERGAN
Ophthalmology

LUMIGAN® (Bimatoprost Ophthalmic Solution) 0.01%
Abbreviated Prescribing Information
Presentation: Eye drop solution, one ml contains 0.1mg bimatoprost **Indications:** Reduction of elevated intraocular pressure (IOP) in chronic open-angle glaucoma and ocular hypertension in adults (as monotherapy or as adjunctive therapy to beta-blockers). **Dosage and Administration:** Please refer to the Summary of Product Characteristics before prescribing. Recommended dose is one drop in the affected eye(s) once daily, administered in the evening. More frequent administration may lessen the IOP lowering effect. If more than one topical ophthalmic medicinal product is being used, each should be administered at least 5 minutes apart. Not recommended in children or adolescents (under the age of 18). Use with caution in renal or moderate to severe hepatic impairment. **Contraindications:** Hypersensitivity to bimatoprost or any of the excipients. Patients who have had a suspected previous adverse reaction to benzalkonium chloride that has led to discontinuation. **Warnings/Precautions:** Prior to treatment patients should be informed of the possibility of eyelash growth, darkening of the eyelid skin, increased iris pigmentation and the potential for hair growth in areas where Lumigan repeatedly comes into contact with the skin surface. Some of these changes may be permanent and may lead to differences in appearance between the eyes when only one eye is treated. The change in iris pigmentation is likely to be permanent, occurs slowly and may not be noticeable for several months or years. At 12 months there was one report of iris hyperpigmentation (incidence of 0.5%). Periorbital tissue pigmentation has been reported to be reversible in some patients. Contains the preservative benzalkonium chloride (0.2mg/ml) which may cause eye irritation and may be absorbed by and discolour soft contact lenses. Lenses should be removed before Lumigan instillation and may be reinserted 15 minutes after administration. Use with caution in dry eye patients, those where cornea may be compromised and in patients taking multiple BAK-containing drops. Monitoring required with prolonged use in such patients. Use with caution in patients with COPD, asthma or compromised respiratory function: those predisposed to low heart rate or low blood pressure or prior history of significant ocular viral infections or uveitis/iritis. Lumigan has not been studied in patients with heart block more severe than first degree or in uncontrolled congestive heart failure; inflammatory ocular conditions, neovascular, inflammatory, angle-closure glaucoma, congenital glaucoma or narrow-angle glaucoma. Cystoid macular oedema has been uncommonly reported (≥1/1000 to <1/100) with Lumigan 0.03% therefore Lumigan 0.01% should be used with caution in patients with known risk factors for macular oedema (e.g. aphakic patients, pseudophakic patients with a torn posterior lens capsule). It has been shown that the more frequent exposure of the eye to more than one dose of bimatoprost daily may decrease the IOP-lowering effect. There have been reports of bacterial keratitis associated with the use of multiple dose containers of topical ophthalmic products, particularly in patients with a concurrent ocular disease. Patients with a disruption of the ocular epithelial surface are at greater risk of developing bacterial keratitis. **Interactions:** There is a potential for the IOP-lowering effect of prostaglandin analogues (e.g. LUMIGAN) to be reduced in patients with glaucoma or ocular hypertension when used with other prostaglandin analogues. **Pregnancy:** Do not use unless clearly necessary. **Lactation:** Decision should be made taking into account the benefit of breast-feeding to child and Lumigan therapy to woman. **Adverse Effects:** In a 12-month clinical study, approximately 38% of patients experienced adverse reactions, the most frequently reported of which was conjunctival hyperaemia (mostly trace-mild) which occurred in 29% patients. Approximately 4% patients discontinued due to any adverse event in the 12-month study. The following undesirable effects were reported: Very Common (≥1/10) conjunctival hyperaemia; Common (≥1/100 to <1/10): punctate keratitis, eye irritation, eye pruritus, growth of eyelashes, eye pain, eyelid erythema, eyelid pruritus, skin hyperpigmentation, hypertrichosis , instillation site irritation. Please refer to Summary of Product Characteristics for full information on side effects. **Basic NHS Price:** £11.71 per 3ml bottle. £35.13 for 3x3ml bottle. **Marketing Authorisation Number:** EU/1/02/205/003-004. **Marketing Authorisation Holder:** Allergan Pharmaceuticals Ireland, Castlebar Road, Westport, Co. Mayo, Ireland. **Legal Category:** POM **Date of Preparation:** November 2014

LUMIGAN® (Bimatoprost Ophthalmic Solution) 0.03%
Abbreviated Prescribing Information
Presentation: Eye drop solution, one ml contains 0.3mg bimatoprost. **Indications:** Reduction of elevated intraocular pressure (IOP) in chronic open-angle glaucoma and ocular hypertension in adults (as monotherapy or as adjunctive therapy to beta-blockers) in either Multi Dose bottles or Unit Dose vials. **Dosage and Administration:** Please refer to the Summary of Product Characteristics before prescribing. Recommended dose is one drop in the affected eye(s) once daily, administered in the evening. More frequent administration may lessen the IOP lowering effect. If more than one topical ophthalmic medicinal product is being used, each should be administered at least 5 minutes apart. Not recommended in children or adolescents (under the age of 18). Use with caution in renal or moderate to severe hepatic impairment. **Contraindications:** Hypersensitivity to bimatoprost or any of the excipients. **Warnings/Precautions:** Prior to treatment patients should be informed of the possibility of eyelash growth, darkening of the eyelid skin, increased iris pigmentation and the potential for hair growth in areas where Lumigan repeatedly comes into contact with the skin surface. Some of these changes may be permanent and may lead to differences in appearance between the eyes when only one eye is treated. The change in iris pigmentation is likely to be permanent, occurs slowly and may not be noticeable for several months or years. At 12 months, the incidence was 1.5% and did not increase following 3 years treatment. Periorbital tissue pigmentation has been reported to be reversible in some patients. The multidose formulation contains the preservative benzalkonium chloride which may cause eye irritation and may be absorbed by and discolour soft contact lenses. Lenses should be removed before Lumigan instillation and may be reinserted 15 minutes after administration. Monitoring required with frequent or prolonged use in dry eye patients or where the cornea is compromised. Use with caution in patients with COPD, asthma or compromised respiratory function; those predisposed to low heart rate or low blood pressure or prior history of significant ocular viral infections or uveitis/iritis. Lumigan has not been studied in patients with heart block more severe than first degree or in uncontrolled congestive heart failure, inflammatory ocular conditions, neovascular, inflammatory, angle-closure glaucoma, congenital glaucoma or narrow-angle glaucoma. Cystoid macular oedema has been uncommonly reported (≥1/1000 to <1/100) and Lumigan should be used with caution in patients with known risk factors for macular oedema (e.g. aphakic patients, pseudophakic patients with a torn posterior lens capsule). It has been shown that the more frequent exposure of the eye to more than one dose of bimatoprost daily may decrease the IOP-lowering effect. There have been reports of bacterial keratitis associated with the use of multiple dose containers of topical ophthalmic products, particularly in patients with a concurrent ocular disease. Patients with a disruption of the ocular epithelial surface are at greater risk of developing bacterial keratitis. **Interactions:** There is a potential for the IOP-lowering effect of prostaglandin analogues (e.g. LUMIGAN) to be reduced in patients with glaucoma or ocular hypertension when used with other prostaglandin analogues. **Pregnancy:** Do not use unless clearly necessary. **Lactation:** Decision should be made taking into account the benefit of breast-feeding to child and Lumigan therapy to woman. **Adverse Effects:** In clinical trials the most frequently reported adverse events (>1/10) were growth of eyelashes (up to 45% in first year with new reports decreasing to 7% at 2 years and 2% at three years), conjunctival hyperaemia (mostly trace to mild - up to 44% in first year decreasing to 13% at 2 years and 12% at 3 years), and ocular pruritus (up to 14% in first year decreasing to 3% at 2 years and 0% at 3 years). Less than 9% of patients discontinued due to any adverse event in the first year with additional discontinuations being 3% at both 2 and 3 years. The following undesirable effects were reported: Very Common (≥1/10): conjunctival hyperaemia, ocular pruritus (common with Unit Dose formulation), growth of eyelashes (common with Unit Dose formulation); Common (≥1/100 to <1/10): superficial punctate keratitis, corneal erosion, ocular burning, ocular irritation, allergic conjunctivitis, blepharitis, worsening of visual acuity, asthenopia, conjunctival oedema, foreign body sensation, ocular dryness, eye pain, photophobia, tearing, eye discharge, visual disturbance/blurred vision, increased iris pigmentation, eyelash darkening, eyelid erythema, eyelid pruritus, pigmentation of periocular skin, headache, hypertension, liver function test abnormal. Please refer to Summary of Product Characteristics for full information on side effects.
Basic NHS Price: £10.30 per 3ml bottle. £30.90 for 3x3ml bottle. £13.75 for 30 Unit Dose vials. **Marketing Authorisation Number:** EU/1/02/205/001-002; 006. **Marketing Authorisation Holder:** Allergan Pharmaceuticals Ireland, Castlebar Road, Westport, Co. Mayo, Ireland. **Legal Category:** POM. **Date of Preparation:** October 2013

GANFORT® (bimatoprost 0.03% / timolol 0.5%)
Abbreviated Prescribing Information
Presentation: Eye drop solution, one ml contains 0.3mg bimatoprost and 5mg timolol (as maleate). **Indications:** Reduction of intraocular pressure (IOP) in adult patients with open-angle glaucoma or ocular hypertension who are insufficiently responsive to topical beta-blockers or prostaglandin analogues in either multi-dose bottles or single-dose containers. **Dosage and Administration:** Please refer to the Summary of Product Characteristics before prescribing. Recommended dose is one drop in the affected eye(s) once daily, administered either in the morning or in the evening. It should be administered at the same time each day. If more than one topical ophthalmic medicinal product is to be used, each should be instilled at least 5 minutes apart. Not recommended in children or adolescents (under the age of 18). Use with caution in renal or hepatic impairment. **Contraindications:** Hypersensitivity to active substances or to any of the excipients. Reactive airway disease including bronchial asthma or a history of bronchial asthma, severe chronic obstructive pulmonary disease. Sinus bradycardia, sick sinus syndrome, sino-atrial block, second or third degree atrioventricular block not controlled with pace-maker, overt cardiac failure, cardiogenic shock. **Warnings/Precautions:** Ganfort may be absorbed systemically. Systemic absorption can be reduced by using nasolacrimal occlusion, or closing the eyelids for 2 minutes. Following topical ophthalmic administration, the same types of cardiovascular, pulmonary and other adverse reactions as seen with systemic beta-blockers may occur, although at a lower incidence. Cardiac failure should be adequately controlled before beginning therapy. Patients with cardiovascular diseases (e.g. coronary heart disease, Prinzmetal's angina and cardiac failure) and receiving hypotension therapy with beta-blockers should be critically assessed and therapy with other active ingredients should be considered. Patients with cardiovascular diseases should be watched for signs of deterioration and of adverse reactions. Use with caution in patients with first degree heart block and in patients with severe peripheral circulatory disturbance/ disorders (i.e. severe forms of Raynaud's disease or Raynaud's syndrome). Respiratory reactions, including death due to bronchospasm in patients with asthma have been reported following administration of some ophthalmic beta-blockers. Use with caution in patients with mild/moderate COPD. Beta-adrenergic blocking agents should be administered with caution in patients subject to spontaneous hypoglycaemia or to patients with labile diabetes as beta-blockers may mask the signs and symptoms of acute hypoglycaemia. Beta-blockers may mask the signs of hyperthyroidism. Ophthalmic beta-blockers may induce dryness of eyes, therefore use with caution in corneal diseases. Closely monitor IOP in patients concomitantly receiving systemic beta-blockers. The use of 2 topical beta-blocking agents is not recommended. While taking beta-blockers, patients with a history of atopy or a history of severe anaphylactic reaction to a variety of allergens may be more reactive to repeated challenge with such allergens and unresponsive to the usual dose of adrenaline used to treat anaphylactic reactions. Choroidal detachment has been reported with administration of timolol after filtration procedures. Anaesthesiologist should be informed when the patient is receiving timolol. Before treatment is initiated, patients should be informed of the possibility of eyelash growth, darkening of the eyelid or periocular skin and increased brown iris pigmentation since these have been observed during treatment with bimatoprost and Ganfort. Increased iris pigmentation is likely to be permanent, and may lead to differences in appearance between the eyes if only one eye is treated. After discontinuation of Ganfort, pigmentation of iris may be permanent. After 12 months treatment with Ganfort (multi-dose), the incidence of iris pigmentation was 0.2%. After 12 months treatment with bimatoprost eye drops alone, the incidence was 1.5% and did not increase following 3 years treatment. The pigmentation change is due to increased melanin content in the melanocytes rather than to an increase in the number of melanocytes. The long term effects of increased iridial pigmentation are not known. Macular oedema, including cystoid macular oedema has been reported with Ganfort (multi-dose). Therefore, Ganfort should be used with caution in aphakic patients, in pseudophakic patients with a torn posterior lens capsule, or in patients with known risk factors for macular oedema (e.g. intraocular surgery, retinal vein occlusions, ocular inflammatory disease and diabetic retinopathy). Ganfort should be used with caution in patients with active intraocular inflammation (e.g. uveitis) because the inflammation may be exacerbated. There is a potential for hair growth to occur in areas where Ganfort solution comes repeatedly in contact with the skin surface. Thus, it is important to apply Ganfort as instructed and avoid it running onto the cheek or other skin areas. The multi-dose formulation of Ganfort, contains the preservative benzalkonium chloride, which may cause eye irritation and may be absorbed by and discolour soft contact lenses. Lenses should be removed before Ganfort multi-dose instillation and may be reinserted 15 minutes after administration. Benzalkonium chloride has been reported to cause punctate keratopathy and/ or toxic ulcerative keratopathy, therefore monitoring is required with frequent or prolonged use of Ganfort multi-dose in dry eye patients or where the cornea is compromised. In studies of bimatoprost 0.3 mg/ml in patients with glaucoma or ocular hypertension, it has been shown that more frequent exposure of the eye to more than 1 dose of bimatoprost daily may decrease the IOP-lowering effect. Patients using Ganfort with other prostaglandin analogs should be monitored for changes to their intraocular pressure. **Interactions:** Potential for additive effects resulting in hypotension, and/or marked bradycardia when ophthalmic beta-blocker solution is administered concomitantly with oral calcium channel blockers, guanethidine, or beta-adrenergic blocking agents, parasympathomimetics, anti-arrhythmics and digitalis glycosides. Beta-blockers may increase the hypoglycaemic effect of antidiabetic medicinal products. Potential systemic beta-blockade (e.g. decrease heart rate, depression) has been reported during combined treatment with CYP2D6 inhibitors. Mydriasis resulting from concomitant use of ophthalmic beta-blockers and adrenaline has occasionally been reported. **Pregnancy:** There are no adequate data from the use of Ganfort in pregnant women. Do not use during pregnancy unless clearly necessary. Ganfort should not be used by breast-feeding women. **Adverse Effects:** No adverse drug reactions (ADRs) specific for Ganfort have been observed in clinical studies. The ADRs have been limited to those earlier reported for bimatoprost and timolol and the majority were ocular, mild in severity and none were serious. Based on 12-month clinical data, the most commonly reported ADR was conjunctival hyperaemia (mostly trace to mild and thought to be of a non-inflammatory nature) in approximately 26% and 21% of patients and led to discontinuation in 1.5% and 1.4% of patients for Ganfort multi-dose and Ganfort single-dose respectively. The following ADRs have been reported with Ganfort multi-dose. Very common (≥1/10): conjunctival hyperaemia. Common (≥1/100 to <1/10): headache, dizziness, superficial punctuate keratitis, corneal erosion, burning sensation, eye pruritus, stinging sensation in the eye, foreign body sensation, eye dryness, eyelid erythema, eye pain, photophobia, eye discharge, visual disturbance, eyelid pruritus, visual acuity worsened, blepharitis, eyelid oedema, eye irritation, epiphora, growth of eyelashes, rhinitis, blepharal pigmentation, hirsutism, periocular skin hyperpigmentation. The following ADRs were reported during clinical trials with Ganfort single-dose. Very common (≥1/10): conjunctival hyperaemia. Common (≥1/100 to <1/10): punctuate keratitis, eye irritation, conjunctival irritation, eye pruritus, eye pain, foreign body sensation, dry eye, lacrimination increased, erythema of eyelid, photophobia, growth of eyelashes, headache, skin hyperpigmentation. Additional adverse events that have been seen with one of the components and may potentially occur also with Ganfort. Please refer to the Summary of Product Characteristics for full information on side effects. **Basic NHS Price:** £13.95 per 3ml bottle. £37.59 for 3x3ml bottle. £17.50 for 30 single-dose vials. **Marketing Authorisation Number:** EU/1/06/340/001-005. **Marketing Authorisation Holder:** Allergan Pharmaceuticals Ireland, Castlebar Road, Westport, Co. Mayo, Ireland. **Legal Category:** POM. **Date of Preparation:** July 2013

Adverse events should be reported. Reporting forms and information can be found at **www.yellowcard.mhra.gov.uk.**
Adverse events should also be reported to Allergan Ltd. **UK_Medinfo@allergan.com** or **01628 494026**.

References
1. Pfennigsdorf S et al. Clin Ophthamol 2013; 7: 1219-5. **2.** Brief G et al. Clin Ophthamol 2010; 4: 1125-9.
3. Lumigan® 0.01% Summary of Product Characteristics 2014. **4.** Pfennigsdorf S et al. Clin Ophthalmol 2012; 6: 739-46.
5. Nixon D et al. Clin Ophthalmol 2012; 6: 2097-3003. **6.** van der Valk R et al. J Clin Epidemiol 2009; 62: 1279-83.
7. Lumigan® UD Summary of Product Characteristics 2014. **8.** Day D et al. Br J Ophthalmol 2013; 97: 989-993.
9. Ganfort® Summary of Product Characteristics 2014. **10.** Ganfort® UD Summary of Product Characteristics 2014.

ALLERGAN
Ophthalmology

Conclusion: Increased levels of aqueous humor CTGF and TIMP-2 may promot the abnormal extracellular matrix accumulation and may be involved in the pathogenesis of XFG.

84. Are we overestimating intraocular pressure in overweight patients?

Kavita Aggarwal, Rashid Zia
William Harvey Hospital, Ashford

Introduction: Accurate measurements of intraocular pressure (IOP) are essential for the diagnosis and management of glaucoma. Studies have shown that increased venous pressure from the Valsalva manoeuvre and breath holding using a Goldmann applanation tonometer (GAT) can cause a transient rise in IOP in overweight patients with difficulty positioning at a slit lamp. Therefore the International Glaucoma Consensus recommends Perkins hand-held applanation tonometer (PT) for measuring IOP in overweight patients.

Purpose: Evaluation of IOP in overweight patients using both GAT and PT.

Method: A retrospective observational study of 14 overweight patients in our glaucoma services was carried out. IOP measurements were recorded using both PT and GAT and were compared to results for a control population from the study by dos Santos et al (Ophthalmology 1998). The difference between the two readings was analysed using Wilcoxon rank-sum test.

Results: The mean IOP using GAT was 24.4±5.2mmHg (range 15-32 mmHg) for the right eye and 23.6±4.63mmHg (range 17-30mmHg) for the left eye. Using PT it was 17.6±5.2mmHg (range 12-28mmHg) for the right eye and 17.5±4.91 mmHg (range 12-28 mmHg) for the left eye. There was a significant IOP decrease of 6.81 ± 3.43mmHg in the right ($p<0.0005$) and 6.14±2.82mmHg in the left ($p<0.0005$) in overweight patients when comparing PT to GAT. In the control group this difference was not statistically significant.

Conclusion: Overweight patients had significantly higher IOP when measured with GAT compared with PT. Use of PT can help to accurately determine IOP in this patient population.

85. Survey on Glaucoma drainage device use: a United Kingdom perspective

Tafadzwa Young-Zvandasara, Vanessa Palmer, Andrew Feyi-Waboso
Royal Gwent Hospital

Introduction: New treatments are providing novel methods for lowering IOP. The choice of a drainage device vs trabeculectomy+antimetabolites and the clinical scenario is debated.

Purpose: This is the first survey of United Kingdom Ophthalmologists to establish practice preference and experience with Glaucoma drainage devices (GDD) vs trabeculectomy.

Method: A web based survey was sent to UKEGS members. As well as determining their experience, fifteen low prognosis clinical scenarios were presented and it was determined if members preferred trabeculectomy+MMC or a GDD in each.

Results: A total of 83 (41.5%) of UKEGS members responded. Some respondents do not carry out GDDs, 56% felt a lack of specialist training was the limiting factor. We asked respondents if they would choose to carry out trabeculectomy+MMC rather than GDD in over 50% of the time, in 10/15 clinical scenarios they choose the former e.g. primary glaucoma surgery (98.2%), patients younger than 50 (93%) and combined phacoemulsification and drainage device (93%), primary tube surgery (86%). Preference for inserting a GDD instead was highest for neovascular glaucoma (80.7%), failed trabeculectomy +MMC (87.7%), previous penetrating keratoplasty (63.2%) and previous scleral buckle surgery (56.1%). Moderate correlation was found between the total GDD surgery in a year and total number of complications experienced (Spearman 0.4, $p=0.02$).

Conclusion: The findings describe practice preference in the UK for GDD surgery. Practice in the UK is not uniform. Further research and guidance is required to establish when it is best to undertake a GDD.

86. Prescription of Glaucoma Eye Drops

Saddaf Naji, Joshua Luis, Julian Hickman-Casey
East Sussex Healthcare NHS Trust

Introduction: The mainstay of glaucoma treatment involves the administration of a variety of eye drops. The aim of treatment is to produce consistently low intraocular pressures, to reduce the likelihood of permanent visual disturbance. Many drops prescribed are administered multiple times per day, and thus raises the issue of non-adherence.

Purpose: This study aims to ascertain the quality of glaucoma medication administration during an admission to a medical or surgical ward at Eastbourne District General Hospital.

Method: The inclusion criteria are as follows:

- Admitted to a general medical or surgical ward between 1st January and 31st March 2014
- Pre-existing diagnosis of glaucoma
- Active treatment with eye drops
- Attended glaucoma follow up clinic within 6 months before admission

Results: 25 patients fulfilled the criteria, resulting in 26 unique episodes of admission. Cumulatively, 312 days of admission were recorded, resulting in 799 doses of medication that should have been administered. Of these doses, 209 (25.8%) were missed due to a failure in prescription, 53 (6.6%) were not administered, and 76 (9.5%) were not documented. In total, 461 (57.7%) doses were correctly prescribed, administered, and documented.

Conclusion: The prescription of glaucoma medications, and eye drops in general, is a subject of some confusion on the wards. Indeed, this is not helped by the large range of drops available or the willingness of some patients to self-administer treatment. The results highlight areas of deficiency in doctors' prescriptions during admission, where many were missed and erroneous.

87. Retrospective audit analysis of post operative cystoid macular oedema rates in patients undergoing cataract surgery whilst on prostaglandin analogues

Mohamed Mohyudin, Michael Benjamin, Louay Whebeh, Thomas Ressiniotis
Heart of England Foundation Trust

Introduction: It has been well postulated that prostaglandin analogue (PA) use peri-operatively at the time of cataract surgery may increase the risk of developing cystoid macular oedema (CMO). There is still some debate on this matter and there is yet to be any evidence based guidance on their use at the time of surgery.

Purpose: Does PA use increase risk of developing post op CMO after cataract surgery and if so, should we consider stopping all patients who are on this treatment at the time of surgery with a view to initiating it again some time after.

Method: Using the medisoft software we identified 9233 eyes that underwent cataract surgery within the trust from January 2012 until September 2014. Of these 582 eyes were found to be on PA's. We then systematically analysed the OCT scans of these patients to establish if they had post op CMO.

Results: Our analysis of the post op OCT scans and medisoft data identified 13 eyes out of 582 (2.2%) who developed post op CMO.

Conclusion: We did not find an increased risk of developing post op CMO in patients on prostaglandin analogues as compared to the risk of developing CMO after cataract surgery in the published literature.

88. Glaucoma patient with good acuity and Charles Bonnet syndrome (CBS).

Lik Thai Lim, Ken Lee Lai, Donald Montgomery
Stobhill Hospital

Introduction: CBS is characterised in patients who experience complex visual hallucinations with retained cognitive insight, devoid of delusions or hallucinations in other sensory modalities. Ophthalmological defined CBS is reported in the context of significant visual impairment, typically with acuity loss being regarded as an important factor.

Purpose: CBS with good acuity is less acknowledged and we discuss such a case in our patient.

Method: Retrospective case report.

Results: A 77 year old female with advanced primary open angle glaucoma reported frequent and recurrent appearances of "white light snow" and "domestic animals" in her vision. Visual acuities were 6/9 in bilaterally. The hallucinations were exclusively visual and the patient retained clear insight of the abnormal imagery. She had markedly constricted visual fields (to within 10^{o} of fixation) bilaterally, due to advanced glaucomatous optic neuropathy bearing cup to disc ratios of 0.85 in both eyes. Past ocular history includes a trabeculectomy procedure to the left eye in 2010 and selective laser trabeculoplasty in the right eye in 2013.

Conclusion: Poor visual acuity is a well-known factor for developing CBS. This risk was shown to be higher in patients with best eye acuity less than 0.3 logMAR. However, this case highlights that reduced acuity is not a necessary condition for ophthalmologically defined CBS. Ophthalmologists should be aware that patients with preserved acuity but significant deafferenting ocular disease such as advanced glaucoma, are also at risk. Wider recognition of this phenomenon may help allay unwanted distress in such patients.

A Clear Vision For Life®

Santen

Tenki ni sanyo-suru

天機に参与する

"Exploring the secrets and mechanisms
of nature in order to contribute to people's health"

Please visit us on stand 6 to find out more about Santen and our products, also for the chance to learn a few of the secrets of origami.

Recently launched in the UK and Ireland, Santen is the leading ophthalmic company in Japan, with a focus on and commitment to ophthalmology for over 120 years.

For Medical information questions please e-mail to: drugsafety@santen.fi
or telephone: +358 3 284 8625
www.santen.eu

Job code: STN 0317 PO 00012, Date of preparation March 2015

89. Outcomes of Combined Phacoemulsification and Deep Sclerectomy - A 10 year Single-centre Study

Bhagyashree Shevade, Karl Merciec, Nitin Anand
Calderdale and Huddersfield NHS Foundaton Trust

Introduction: -

Purpose: To report the outcomes of combined phacoemulsification and deep sclerectomy (phaco-DS) from a single UK centre over a 10-year period.

Method: Retrospective analysis of phaco-DS data extracted from an ongoing glaucoma surgery database within Calderdale and Huddersfield NHS Trust. 296 eyes of 282 patients were included. Data included patient demographics, pre- and post-operative intra-ocular pressure (IOP), use of mitomycin C (MMC), spacer device implantation and follow-up details including surgical success rates. IOP success criteria were: (A) IOP <19 mmHg and/or 20% decrease from baseline. (B) IOP <16 mmHg and/or 30% drop from baseline.

Results: Mean follow-up was 63.5 ± 35.3 months. MMC was applied in 145 eyes (49%).Kaplan-Meier success rates in all eyes for criteria A were 89.1% and 80% with glaucoma medications (qualified success) and 81.2% and 68.3% without medications (unqualified success) at 2 and 5 years respectively. Qualified success for criteria B was 72.4% and 61.4% and unqualified rates were 67.2% and 55.2% for the same time periods.Repeated measures ANOVA showed significantly lower IOP in the phaco-DS with MMC group upto 3 years post-operatively (p=0.002).Cox's proportional hazards for criteria B showed no significant effect of MMC application in the long-term (p=0.2).Increasing age and laser goniopuncture were positively associated with success while absence of spacerdevices was negatively associated. At last follow-up 20% of eyes were on glaucoma medications. Complication rates were low with hypotony rates of 0.68%.

Conclusion: This study confirms the long-term safety and efficacy of phaco DS for coexisting cataract and glaucoma. MMC may be beneficial for achieving lower IOPs.

90. The influence of OCT on decision-making in glaucoma diagnosis

Lanxing Fu, Andrew Tatham
Princess Alexandra Eye Pavilion

Introduction: Optical coherence tomography (OCT) measures of retinal nerve fibre layer (RNFL) are increasingly used to aid glaucoma diagnosis. Clinicians integrate information from OCT by intuitively modifying an initial suspicion of disease (pretest probability) to derive a posttest probability, however there is likely to be variation in this process.

Purpose: To evaluate the effect of OCT RNFL thickness measures on decision making in newly referred glaucoma suspects.

Method: Prospective study of both eyes of 20 patients with an average age of 69.0 ±10.1 years. All had disc photographs, perimetry and OCT. Clinical information was presented to 13 ophthalmologists who estimated the pretest probability of glaucoma. OCT images were then shown and post-test probabilities estimated by each clinician. Posttest probabilities were compared to a previously published OCT nomogram. Intra-class correlation coefficients (ICC) for inter-grader agreement were calculated using a two-way random effects model.

Results: Eyes had an average RNFL thickness of 86.2±16.7 um and MD of 2.71±3.13 dB. Average pre-test probability of glaucoma was 37.0±33.6% with wide variation in agreement among clinicians (ICC = 0.50, 95% CI 0.38-0.64). Inclusion of information from OCT improved agreement (ICC = 0.64, 95% CI 0.52-0.76), however agreement regarding probability of glaucoma was improved further using the OCT nomogram (ICC = 0.73, 95% CI 0.62 to 0.82).

Conclusion: OCT improves agreement among clinicians regarding the probability of glaucoma in glaucoma suspects. The OCT nomogram is a simple tool that could be used in clinical practice to aid decision-making.

91. Use of a slowly resorbable cross linked viscoelastic implant (Healaflow) for the treatment of pre-phthisical hypotony

Richard Stead, Suzanne Turner, Zain Juma, Velota Sung
Birmingham Midland Eye Centre

Introduction: Ocular hypotony can be the result of either reduced production or increased drainage of aqueous humour. Persistent hypotony resulting from a reduced production of aqueous can be very difficult to treat and may herald early phthisis. Many therapies have been proposed for this pre-phthisical hypotony and include topical or intravitreal corticosteroids, ibopamine, intraocular gas or silicone oil and intraocular viscoelastic material.

Healaflow is a recently introduced viscoelastic device developed as a long-time space maintainer for use in glaucoma filtering surgery. It consists of reticulated hyaluronic acid and is therefore likely to remain in the eye for a long period of time.

Purpose: To assess the efficacy and safety of intracameral Healaflow in the treatment of pre-phthisical hypotony.

Method: Retrospective case series review

Results: Three patients having more than one intracameral injection of healaflow with follow up greater than 12 months were identified. Two patients had two injections separated by 5-6 months; the third had 5 injections over a 20 month period. Only one IOP spike (44mmHg from 4mmHg) occurred following a larger volume (0.4ml) of healaflow injected. All patients had previously had multiple viscoelastic injections and all subjectively preferred the healaflow citing improved vision, comfort or duration as the main reasons.

Conclusion: Healaflow appears to be safe in the treatment of pre-phthisical hypotony. The reticulated hyaluronic acid may prolong its presence in the anterior chamber reducing the number of injections required. Further study into its use is warranted.

92. Patient selected educational interventions to improve glaucoma medication compliance

Mital Shah, Radhika Bali, Nasir Jamal, Chrystel Dooley, Asifa Shaikh
Stoke Mandeville Hospital

Introduction: Noncompliance with glaucoma medications is common. Lack of information about glaucoma and its treatment is a causative factor. Patient directed educational interventions have been shown to improve glaucoma medication compliance.

Purpose: To identify patient selected educational interventions to improve glaucoma medication compliance.

Method: Patients 69 years or below diagnosed with glaucoma, ocular hypertension or glaucoma suspect and prescribed topical glaucoma medications, registered at a general practice with 13,422 patients, were identified. A previously conducted study identified this age cohort as the least compliant. A questionnaire with 28 questions was devised to identify patient factors influencing glaucoma medication compliance.

Results: 70 patients 69 years or under were identified. 27 (38.6%) patients returned completed questionnaires. 18 (66.7%) were male and mean age was 63 years (range 23–69). All patients received most of their information on glaucoma or its treatment from the hospital. Only 15 (55.6%) patients received training on eye drop instillation and 6 (22.2%) patients felt such education would improve medication compliance. 6 (22.2%) patients felt obtaining more information about glaucoma and its treatment at diagnosis would improve medication compliance. Over half of patients (51.9%) prefer to receive this information verbally and almost half of patients (48.2%) were happy to receive this from non-medical trained volunteers in the clinic.

Conclusion: Educational interventions including training on drop instillation techniques and provision of disease information and treatment at diagnosis will help improve compliance. Hospitals appear most suitably placed to introduce these measures with a preference for verbal information, which could be provided by non-medical trained personnel.

93. Human error in reporting Goldmann applanation tonometry: Do Glaucoma consultants report more accurate intraocular pressures compared to trainee doctors in glaucoma patients?

Chrishan Gunasekera, Nuwan Niyadurupola
Norfolk and Norwich University Hospital NHS Foundation Trust

Introduction: Goldman applanation tonometry (GAT) has been considered as “gold standard” in measuring intraocular pressure. White marker points on the Goldmann dial indicate 2mmHg intervals in pressures starting from 0mmHg. The black space between marker points indicates odd number intraocular pressures.

Purpose: We posit that reading off white markers (i.e. even pressure measurements) are easier to determine than odd pressure measurements. We aim to assess if trainees would round to even number pressures more, therefore measuring less accurate pressures, when compared to glaucoma consultants.

Method: Consecutive patient notes were retrospectively analysed from glaucoma clinics at Norwich University Hospital between 25th September 2014 and 10th November 2014. GAT readings from consultants and junior doctors were noted (n=836) and Fisher’s Exact Test used to determine statistical significance.

Results: GAT Intraocular pressures were analysed (n=836) of which 503 (60.2%) were even; range 1-56mmHg (mean= 16.6mmHg). Consultants significantly reported more odd number intraocular pressures (n=263; 41.95%) than juniors (n=70; 33.5%) p=0.0339.

Conclusion: Glaucoma consultants reported more odd number intraocular pressures than trainee ophthalmologists. This may be due to glaucoma consultants understanding the clinical significance of measuring accurate intraocular pressures within 1mmHg and having more experience at GAT. More even pressure measurements were observed

overall which may be due to intra-observer bias amongst both junior and consultant ophthalmologists. This bias may be potentially controlled by increased numerical markings on the GAT dial.

94. Endoscopic Cyclophotocoagulation as an adjunct to Phacoemulsification: effect on intraocular pressure (IOP) lowering stratified by pretreatment intraocular pressure

Lei-Ai Lim, Thomas Forshaw, Michael Smith
West of England Eye Unit

Introduction: Combined phacoemulsification and endoscopic cyclophotocoagulation (ECP) provides the opportunity to co-manage cataract and glaucoma which frequently co-exist in this age group. Endoscopic cyclophotocoagulation is more efficient and less destructive compared to transscleral approach

Purpose: To examine the outcomes of endoscopic cyclophotocoagulation performed at the West of England Eye Unit in 2013

Method: Retrospective case note review of Endoscopic cyclophotocoagulations with or without phacoemulsification and IOL implant performed between January 2013 to October 2013 at the West of England Eye Unit, Devon.

Results: 127 of 137 patients listed for ECP were included in this review. The mean age was 78.5 (SD 9.1), with equal distribution of sex. 82%(n=109) of patients had combined phacoemulsification and ECP whilst 18% (n=24) had only ECP. 64% patients had diagnosis of primary open angle glaucoma and 22% had normal tension glaucoma, 6% pseudoexfoliation, 5% primary angle closure, 2% ocular hypertension, 1% secondary glaucoma. 12 months follow up data was available for 82% of patients. 46.5% patients achieved > 30% reduction in IOP and 63% achieved > 20% reduction in IOP. 2 patients had further transcleral cyclodiode and trabeculectomy respectively. The mean number of drops pre-ECP was 2.62 (SD 0.93) and post-ECP was 2.50 (SD 0.98). The IOP lowering effect of ECP was least in patients with pretreatment IOP of less than 14mmHg. There was no sight threatening complications in this series.

Conclusion: Endoscopic cyclophotocoagulation is safe and effective. The IOP lowering effect in the subgroup with presenting IOP of less than 14mmHg is questionable. There was no significant reduction in the number of drops used.

95. Complication rate of elective YAG peripheral iridotomy for narrow angles, and the relevance of post-operative steroid drops

Thomas Nixon, Chandni Gupta, Sumit Dhingra
Peterborough City Hospital

Introduction: YAG peripheral iridotomy is a common elective procedure for patients with narrow anterior chamber angles, although as it has no immediate perceptible benefit it needs careful explanation to the patient. Steroid drops are commonly prescribed post-operatively, although there is little evidence to support this. Some patients find administering drops difficult, and it is poor practice to give unnecessary medication.

Purpose: To help us accurately inform patients of the likelihood of complications from elective YAG PI, and to establish whether post-operative steroid drops affect complication rate.

Method: Retrospective case-note review was undertaken of 239 eyes who had elective YAG PI for narrow angles performed by two different operators, one prescribing a week of post-operative steroid drops (100 eyes) and one who just gave a stat topical steroid immediately post-procedure (139 eyes). Uveitic or acute angle closure eyes were excluded.

Results: Clinically significant complications were less frequent than previously reported. In the steroid group, one (1%) eye presented post-operatively with iritis needing treatment, one (1%) eye was noted to have posterior synechiae and had also developed a macula intraretinal cyst with reduced vision. From the patients not given post-operative steroid drops, no patients presented with iritis but five (3.5%) were noted to have developed posterior synechiae post-operatively, although with no apparent clinical impact.

Conclusion: Elective YAG PI for narrow angles is a safe procedure with low probability of complications. It may be unnecessary to give post-operative topical steroid routinely.

96. A fixed combination of brinzolamide 1% and brimonidine 0.2% (BBFC) given twice-daily versus brinzolamide 1% (BRINZ) or brimonidine 0.2% (BRIM) monotherapy in patients with open-angle glaucoma or ocular hypertension

Ejaz Ansari
Maidstone & Tunbridge Wells NHS Trust

Introduction: Fixed combination of BBFC (SIMBRINZA®, Alcon Laboratories Inc) effectively lowers intraocular pressure (IOP).

Litechnica *Selector* II

SLT / YAG Combo or Dedicated SLT Laser

Cost effective upgrade option for existing Lpulsa laser

Specification

Mode:
Pure Fundamental Super Gaussian optics YAG
Homogenous SLT

Max energy:
12mj YAG
2mj SLT

Spot size:
8 micron YAG
400 microns SLT

Cone angle:
16 degrees YAG
3 degrees SLT

Burst mode YAG:
1, 2 or 3 shots

Pulse width:
4ns YAG
3ns SLT

Combining the technology of SLT and YAG photodisruption.
Treat glaucoma safely and effectively using the
Selector II

Unique Safety Features

- Clear visual and audible warnings when switching to SLT
- Flashing SLT display indicates mode

- New improved design, utilising 2nd generation beam steering technology
- Quiet in operation
- Clearly defined slt beam
- Illumination / laser "on axis" operation
- Easy to use centralised displays and controls
- Super Gaussian optics (Q-YAG); ultra low order mode for minimum lens pitting
- 10 sec start up time

Come and visit us on STAND N at the RCOphth Congress, ACC Liverpool, 19-21 May

SLT stand alone version also available

Litechnica
Leaders in Laser Technology

Litechnica Ltd, Kirby House, 122 Heston Road, Heston, Middlesex, TW5 0QU T: 020 8577 2450, F: 020 8572 8292, W: www.litechnica.co.uk

VersaVIT 2.0™

Redefining the Vitrectomy System

SOME PRODUCTS CLAIM TO CHANGE THE GAME . . .

OTHERS REDEFINE IT.

VersaVIT 2.0™ is the market's first and only simplified, small form vitrectomy system providing creative solutions to yield operational efficiency and financial solvency, regardless of your current vitrectomy platform.

- **Efficiency** VersaVIT 2.0™ offers several key features to help drive operational efficiencies in the operating room.
- **High Speed Cutting** Gold standard MID Labs™ vitrectors deliver smooth, high speed cutting up to 6,000 cpm.
- **Duty Cycle Control** Easy-to-use duty cycle controls offers the surgeon flow control independent from vacuum, providing greater precision at any desired cut speed.
- **LED Illumination** Dual LED light sources provide safe, clear, long lasting illumination.
- **Pressurized Infusion** Delivers precise control of infusion pressure.

Synergetics®

M.I.S.S Ophthalmics

T 01536 741139 F 01536 460762 www.miss-ophth.com

Purpose: To determine if twice-daily BBFC (recommended regimen in the European Union) was superior to twice-daily BRINZ or BRIM monotherapy in patients with open-angle glaucoma or ocular hypertension.

Method: Prospective, randomized, double-masked multinational study with primary endpoint being mean change in diurnal IOP (mean of 9 am, 11 am and 4 pm time points) from baseline to month 3. Previous IOP-lowering medications were washed out before randomization. Other endpoints included mean percentage change in IOP from baseline to week 2, week 6, and month 3 and the incidence of adverse events (AEs).

Results: N=559 patients; 193 received BBFC, 191 received BRINZ, and 175 received BRIM. At month 3, mean change in diurnal IOP with BBFC was superior to either BRINZ (least square [LS] mean difference: -1.4 mmHg; $p < 0.0001$; 21.5% greater decrease) or BRIM (LS mean difference: -1.5 mmHg; $p < 0.0001$; 23.4% greater decrease). With BBFC, mean reduction in IOP from baseline to month 3 was 28.1% to 36.0% across all time points. The most common AEs with BBFC were ocular hyperaemia, eye pain, and dysgeusia (5.7% each).

Conclusion: Twice-daily administration of BBFC provided superior IOP-lowering efficacy compared with twice-daily BRINZ or BRIM monotherapy.

97. Shared Care of Patients with Stable Glaucoma and Ocular Hypertension

Shivakumar Sajjan, Andrew Enevoldson, Gerard Jayamanne
Doncaster Royal Infirmary

Introduction: In April 2009 NICE recommended certain areas of glaucoma-related work particularly when glaucoma and ocular hypertension have been stable for two years,could be undertaken by optometrists with a specialist qualification. The Royal College stated that this could be considered when adequate facilities were available . The GMC states accountability for such patients remains with the hospital clinician

Purpose: To determine the suitability of discharge of patients to to community care

Method: We prospectively collected data on 53 patients from clinics specifically aimed to discharge patients into the community. This considered: topical treatment, normal tension glaucoma, ocular co-morbidities, possible treatment or investigation in the next 12 months, previous surgery or laser treatment, change of treatment at appointment and then deduced suitability for nurse led or community led services. Patients ranged in age from 47-92 with a mean, median and mode between 71 and 72 years of age

Results: 29 of the 53 patients (55%) had ocular co-morbidities. 40 of the 53 patients (75%) were felt to require investigation or treatment in the next 12 months. This in combination with other factors meant that 41 of the 53 patients (77%) were deemed suitable for nurse led glaucoma services and 6 of the 53 patients (11%) were deemed suitable for community led services. These results suggest the vast majority of patients needed to stay under the care of hospital eye services.

Conclusion: We concluded that other factors needed to be taken into consideration prior to initiation of shared care: ocular co-morbidites, unstable glaucoma, previous surgery and also patient choice (all of the 6 patients declined community led care). More specific guidance is required from NICE and the Royal College in order for patients to be discharged into the community. Further recognition is required for optometrists with required knowledge and skills to look after these patients

98. Bilateral Aqueous misdirection and spontaneous recurrence

Matthew Richardson, Obeda Kailani, Avinash Kulkarni, Edward Pringle, Dan Lindfield
King's College Hospital

Introduction: Aqueous Misdirection (AM), is rare condition often misdiagnosed as angle-closure glaucoma. Eyes at risk are often short (<20mm axial length) or suffer early post operative anterior chamber shallowing.

Purpose: A rare report of bilateral Aqueous Misdirection in eyes with normal axial length (21.32 & 21,22mm) with spontaneous recurrence 8 years later despite vitrectomy.

Method: A 50-year old female developed AM following trabeculectomy in one eye and routine cataract surgery in the other.

Results: Both anterior chambers remained shallow with elevated pressures despite atropine and maximal medical therapy. Both eyes had laser disruption of the anterior hyaloid face (tran-pupillary in pseudophakic eye and tran-iridectomy in trabeculectomy) and pars plana vitrectomy.
8 years later the trabeculectomy eye developed recurrence about 3 weeks after having to stop Atropine due to facial flushing. Despite having combined lens extraction and vitrectomy and two large patent iridotomies the AC was still shallow with IOP > 30mmHg. Further vitrectomy specifically trimming the vitreous base and ensuring the iridotomies were full thickness (vitreous, zones, bag and iris trimmed) brought rapid resolution.

Purpose: To provide epidemiological data for a new photographic DRS reading centre in Chittagong,Bangladesh.Primary aims: to screen/grade DR; to increase awareness and eye health-seeking behaviour among diabetics;and,to increase DR treatment capacity.

Method: An initial KAP survey was conducted to assess the knowledge, attitude, and current self-care practices of diabetes.A new model of electronic DR screening/referral system was set up in a diabetic hospital and photographic reading eye-centre.Healthcare practitioners were trained in behaviour change communication (BCC),and ophthalmologists trained in DR grading and laser. External quality and assurance with online test and training (TAT) was undertaken for graders.

Results: Between 2010-2013, 20519 diabetics were photographically screened with R0-51%, R1-28%, R2-12%, R3-9% levels detected. 6100 patients had referrable retinopathy,and 3296 patients treated with laser and/or intravitreal bevacizumab.For BCC,12238 patients received novel diabetic educational toolkits.Intensive counselling was effective in increasing uptake of screen-positive patients in rural areas.The online TAT demonstrated 75-95% levels of DR grading.

Conclusion: This is the first self-sustaining,population-based photographic DRS centre to be established in Bangladesh.The DR screen-to-treat services have been fully transitioned to local healthcare providers. Despite positive influences of education and counseling on care-seeking behaviour, significant barriers for DR screen-positive patients referred for timely treatment,include cost,transportation, and cultural factors.

102. Patient preferences in wet age related macular degeneration

Julia Baxter, Alison Fotheringham, Alexander Foss
Queens Medical Centre

Introduction: Provision of wet age related macular degeneration (wAMD) services is challenging and varies nationally.

Purpose: To investigate the relative importance that patients with wAMD attach to different aspects of their treatment when given theoretical choices over options for their treatment and its delivery.

Method: Ten scenarios with different combinations of 4 factors (choices) were presented in 2 separate tasks. Assuming that these factors are independent allows a generation of a plan of only 8 scenarios (using Orthoplan in SPSS) and with 2 extra scenarios (for test-retest reliability) gives 10 scenarios to form the basis of a conjoint analysis. For this analysis, 57 patients were prospectively interviewed and were asked to rank the scenarios in order of desirability.

Results: The relative importance of each factor in task 1 was: 41% in favour of a 1-stop service, 21% in favour for 2-monthly appointments, 19% in favour of a doctor injector and 19% for shorter waiting time. In task 2 the relative importance was 62% for good vision, 16% for 2-monthly appointments, 12% for low cost to NHS and 11% for on-label drug usage. The 2 holdout cards in each task showed statistically significant correlation indicating a high degree of reliability.

Conclusion: Patients express maximum preference for good vision, for 1-stop clinics and 2-monthly visits. They also prefer shorter waiting times, doctor injectors and low cost to the NHS and the least important factor identified was on-label drug usage. This has significant implications when designing a patient centred service.

103. Aged diabetic Goto Kakizaki rats show increased markers of Alzheimer's Disease

Timothy Wong, Marianne Phillips, Shereen Nizari, M Francesca Cordeiro
UCL

Introduction: Research has shown that diabetes and Alzheimer's disease (AD) share similar pathophysiology. The hallmarks of AD include neurofibrillary tangles, which consist of abnormal tau (p-tau) and neurofilaments (NFs), which tend to be hyperphosphorylated.

Purpose: Goto Kakizaki (GK) rats are spontaneously diabetic and are considered a model for T2DM in humans. As the brain and retina share a common embryological origin, AD pathology that occurred in the brains of AD transgenic mice also occurred in the retina. We investigate tau pathology and neurofilamentopathy in the retinas of aged GK rats, as measures of AD pathology.

Method: The eyes from 23 3-, 12- and 18-month old GK rats and age-matched controls were obtained and embedded in paraffin blocks. Sections from these blocks were stained with antibodies for tau, p-tau and NF-heavy (NFH). Immunohistochemistry images were visualized and obtained. These images were graded for distribution and fluorescence of the antibodies by three independent observers without knowledge of diabetic or control status.

Conclusion: This rare bilateral and recurrent case conveys the treatment challenges presented by AM. Early restoration of aqueous-vitreous interface is essential and often not achieved without a thorough vitrectomy.

99. Optometrist Referrals for Suspected Glaucoma: The NICE Age

Hannaa Bobat, Shahiba Begum, James Kirwan
Portsmouth

Introduction: Impact of the 2009 NICE glaucoma guidelines on optometrist referrals to hospital eye services (HES): how important is the Portsmouth Glaucoma Referral Refinement Scheme (GRRS)?

Purpose: To determine the positive predictive value (PPV) of optometrist referrals to the GRRS.

Method: Retrospective analysis of 100 'positive' and 100 'negative' referrals to the GRRS. Positives: those referred to HES; negatives: those discharged from the GRRS. Reasons for referral were obtained; PPV for each reason was calculated by correcting for an overall PPV, determined by a preliminary analysis of 134 consecutive referrals.

Results: Of the positive GRRS referrals, 88% had a positive diagnosis in HES. Referral reasons for 100 positives and 100 negatives: raised intraocular pressure (IOP), suspicious optics discs (OD), visual fields (VF). Additional reasons included anterior chamber depth (ACD) and positive family history (FH) of glaucoma. Corrected analysis revealed that the commonest reason was raised IOP (n=149), with a PPV of 0.18. PPV for OD was 0.22 (n=32) and 0.18 for VF (n=11). PPV increased to 0.39 with two reasons: IOP+OD = 0.45 (n=20); IOP+VF = 0.39 (n=18); OD+VF = 0.33 (n=24). PPV was highest with three reasons: IOP+OD+VF = 0.68 (n=21). Referrals including ACD as a reason: PPV = 0.21; with FH (n=123) PPV = 0.08.

Conclusion: The majority of referrals are based on a single finding; the chance of a positive diagnosis is <20%. Referral accuracy doubles with two findings and increases further with three. The GRRS plays an important role in reducing the increased burden placed on HES in the post-NICE era.

MEDICAL RETINA

100. Ultra-widefield Fluorescein Angiography in Diabetic Macular Oedema Predicts Response to Ranibizumab Treatment

Kanmin Xue, Elizabeth Yang, Victor Chong
Oxford Eye Hospital

Introduction: Ultra-widefield fundus fluorescein angiography (UW-FFA) allows simultaneous imaging of macular and peripheral vascular abnormalities contributing to diabetic macular oedema (DMO).

Purpose: To assess DMO using UW-FFA and predict differential responses to ranibizumab.

Method: A prospective cohort of 56 eyes of 38 patients with DMO underwent UW-FFA at baseline. 39 eyes received three-monthly intravitreal ranibizumab injections with follow-up at four months using optical coherence tomography (OCT). UW-FFA findings were correlated with responses to ranibizumab.

Results: Based on UW-FFA, DMO can be categorised into three types: (1) focal leakage from microaneuryms (51%), (2) diffuse leakage associated with capillary non-perfusion, often in the periphery (36%), and (3) diffuse leakage associated with new vessels (13%). Types 2 and 3 had greater areas of macular oedema (>400µm) on OCT compared with type 1. No significant difference in central retinal thickness (CRT) was noted between the three groups. Following ranibizumab treatment, type 1 and 2 achieved reductions in mean CRT of 151µm ($p<0.0001$) and 209µm ($p=0.003$) respectively. Type 3 had too small a sample size for meaningful results. Best-corrected visual acuity (BCVA) improved in type 1 and 2 by 0.06 logMAR ($p=0.068$) and 0.13 logMAR ($p=0.015$) respectively. BCVA improvement in type 1 DMO appeared less significant due to better BCVA at baseline.

Conclusion: These findings support UW-FFA in assessing DMO before anti-VEGF therapy, especially when oedema extends beyond the macula. UW-FFA can detect peripheral ischaemia and exclude active new vessels. This could provide differential prognosis about treatment response.

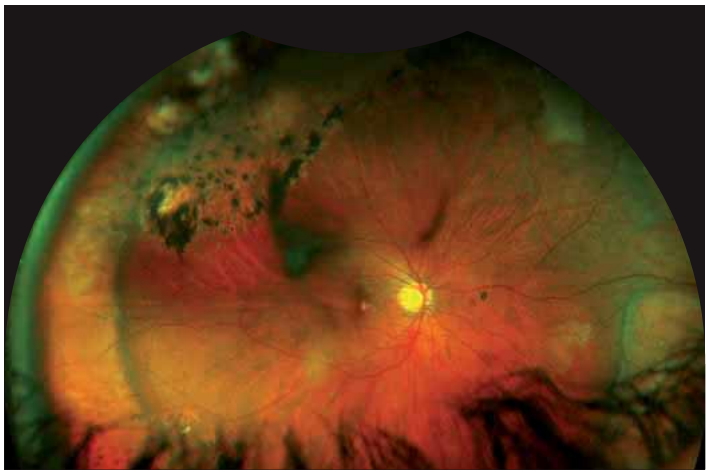
101. The Diabetic Retinopathy Education, Training and Treatment (DRETT) Project: Outcomes of a New Grading Centre in Bangladesh

Mahiul Muqit, Nick Kourgialis, Erica Khetran, Jasmin Ahmad, Rabiul Husain, Amin Uddin, David Friedman
Chittagong Eye Infirmary and Training Complex, Bangladesh

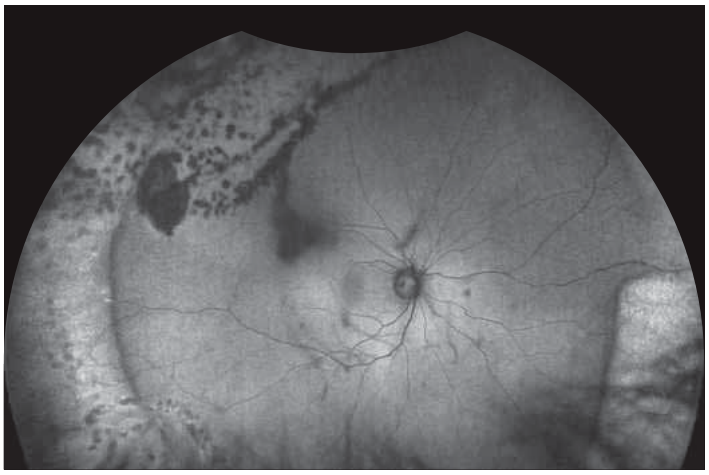
Introduction: Diabetes mellitus is a global epidemic.The major international challenge is to develop a sustainable program model that increases access to high-quality training,photographic diabetic retinopathy screening (DRS),and treatment among diabetics in resource-poor countries.

California

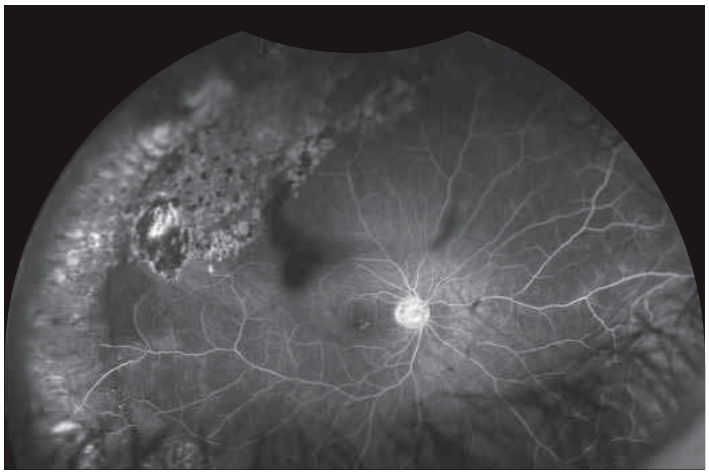
Optos introduces its latest ultra-widefield (UWF™) imaging device, California which is specifically designed for vitreo-retinal specialists and ophthalmologists. California includes a new UWF optomap® imaging modality, Indocyanine Green angiography (*icg*) while retaining composite colour, red-free, autofluorescence (*af*) and Fluorescein angiography (*fa*).



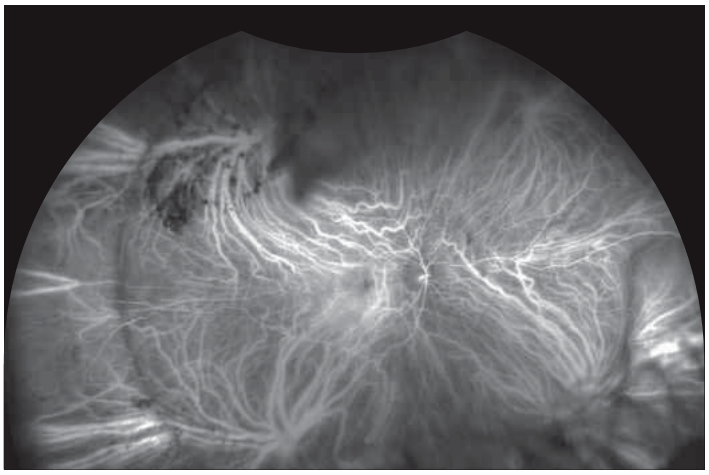
optomap *plus*



optomap *af*



optomap *fa*



optomap *icg*

Images courtesy of SriniVas Sadda, MD
Doheny Eye Institute

To learn more about California visit us at stand W in the exhibition.

optos® Ophthalmology

www.optos.com

Building *The* Retina Company

Results: There seemed to be an age-dependent increase of p-tau and NFH in the diabetic retina, but not the control retina ($p<0.05$). Increased levels of p-tau and NFH were found in the diabetic retina as compared to the control retina.

Conclusion: There is increased neurodegeneration in the diabetic retina over time and as compared to the control retina. This seems to be the first study that demonstrated AD pathology in the retinas of aged diabetic GK rats.

104. Retinal findings in cerebral malaria

David Fraser, Shyamanga Borooah , Vincent Tiong, Ganeshan Ramsamy, Tom MacGillvray, Bal Dhillon, Richard Maude
University of Edinburgh

Introduction: Cerebral malaria is a severe life-threatening condition. The greatest disease burden affects countries with the scarcest healthcare resources. This highlights the need to develop a fast, cheap system for the monitoring of cerebral malaria. The retina is known to be affected in cerebral malaria.

Purpose: To investigate retinal changes in cerebral malaria.

Method: We prospectively recruited patients with cerebral malaria and clinically relevant controls. Cerebral malaria severity was assessed using Glasgow Coma Scale (GCS). Fundus photographs were taken using a high-definition handheld camera. Images were analysed using a previously standardised semi-automated computer platform. 2 major arterioles and 2 major venules were analysed per image and vessel widths and tortuosity were recorded.

Results: 134 of 283 patients had cerebral malaria, 64 non-cerebral malaria, 27 non-malarial sepsis, 19 non-malarial encephalopathy and 39 were healthy controls. At 1 ODD (optic disc diameter), 2 ODD and >2 ODD there was significantly greater variance in venular width in the cerebral malaria group compared with the uncomplicated malaria, sepsis and healthy groups ($p=0.0479$, $p=0.0124$, $p=0.0027$, $p=0.0176$, $p<0.001$, $p=0.002$, $p=0.004$, $p=0.004$, $p=0.002$). At all distances from the optic disc there were significant positive correlations between venular widths and GCS ($p=0.0015$, $p=0.092$, $p=0.0008$).

Conclusion: We found that in a Bangladeshi population, retinal venular widths are a novel biomarker for disease severity in cerebral malaria. The findings may be a useful additional parameter for monitoring cerebral malaria treatment.

105. Long-term outcomes of intravitreal ranibizumab for neovascular age-related macular degeneration in a well-defined region of the United Kingdom

Robert Johnston, Miranda Buckle, Paul Donachie
Gloucestershire Eye Unit

Introduction: A single-centre study of clinical outcomes of ranibizumab therapy in treatment-naive eyes for neovascular age-related macular degeneration (nAMD).

Purpose: To study long-term, real-world whole population clinical outcomes of ranibizumab therapy in treatment-naive eyes for nAMD.

Method: Data collected prospectively from a single centre serving a defined population using an electronic medical record included: demographics, Early Treatment Diabetic Retinopathy Study visual acuity (ETDRS VA) at all visits, injection dates, central 1mm retinal thickness, and operative and post-operative complications.

Results: 1,483 eyes from 1,278 patients were included in this study. The median age at the time of first injection was 82.5 years, 64.9% were female, and another ocular pathology was present in 7.3% eyes. The baseline VA was 23-39, 40-54, 55-70, and >70 ETDRS letters for 17.3%, 23.1%, 42.7% and 16.9% of eyes respectively. The median VA in all baseline groups improved after the loading phase but declined back to baseline level by 2-5 years. The rate of endophthalmitis following intravitreal injection was 1 in 2,124 injections.

Conclusion: These long-term real-world data demonstrate that on average VA increases during the loading phase, but returns to near baseline levels after 2-5 years of treatment for each baseline category. Patients should be identified and treated as early as posible, since presenting VA predicts the VA maintained after 5 years of treatment. NICE guidance advising treatment only for eyes with vision below 70 letters does not promote best long-term visual acuity outcomes for patients.

106. Post Hoc Analyses of the MYRROR Study to Evaluate Prognostic Factors for Visual Outcomes in Patients With Choroidal Neovascularisation Secondary to Pathological Myopia

Rufino Silva
Centro Hospitalar e Universitário de Coimbra

Introduction: Choroidal neovascularisation (CNV) is a frequent cause of central vision loss in patients with pathological myopia.

Purpose: To identify prognostic factors associated with improvement in best-corrected visual acuity (BCVA) in patients with myopic CNV treated with intravitreal aflibercept (IVT-AFL).

Method: Post hoc analysis of the MYRROR study; 121 patients were randomised 3:1 to IVT-AFL injection or sham/IVT-AFL (sham to Week 20 [W20]; IVT-AFL from W24 to W48). Gender, age (years), baseline BCVA (letters), CNV location, CNV size (disc area), area of leakage, spherical equivalent value (diopters), axial length (mm), and central retinal thickness (CRT; µm) were included.

Results: Stepwise linear regression analysis of patients receiving IVT-AFL 2-mg identified age (linear regression β=–0.2830), baseline BCVA (–0.4494), spherical equivalent value (–0.3062), and CRT (–0.2107) as significant (P<0.05) prognostic factors for improvement in BCVA at W48; baseline BCVA and age were negatively correlated with change in BCVA at W48 (Pearson's correlation; P<0.05). The most common ocular adverse events in the study eye were conjunctival haemorrhage (11%) in the IVT-AFL group and punctate keratitis (12.9%) in the sham/IVT-AFL group.

Conclusion: Myopic CNV patients in all subgroups benefited from IVT-AFL. Age, BCVA, spherical equivalent value, and CRT appeared to be prognostic factors for the magnitude of improvements in BCVA with IVT-AFL. The incidence of adverse events in this study was consistent with the well-known safety profile of IVT-AFL in retinal disease.

107. Charles Bonnet Syndrome -- In patients with Age-related Macular Degeneration

Jonathan Ng, Nachiketa Acharya
Sheffield Teaching Hospitals NHS Foundation Trust

Introduction: Charles Bonnet Syndrome (CBS) is a disorder of complex visual hallucinations occurring in the elderly with visual impairment. It was suggested that the aging population causes an increase in the incidence of CBS. However, CBS is still under-diagnosed in most clinical settings because patients are often reluctant to admit to their hallucinations due to the strong social stigma against it. Various incidence rates were reported, ranging from 0.4 - 14%.

Purpose: The aim of this study was to determine the incidence rate and rate of patient awareness of CBS in patients with age-related macular degeneration (AMD) in the Royal Hallamshire Hospital, Sheffield, from January to June 2014.

Method: 45 patients undergoing anti-vascular endothelial growth factor injections to treat AMD were asked to complete a questionnaire on the day of the procedure. The questionnaire involved 6 questions to identify the awareness of CBS and those who have CBS by asking about the hallucinatory content, and excluding those with hallucinations in other modalities or active mental illnesses.

Results: Incidence rate and the rate of patient awareness were 24.5% and 20% respectively among those 45 patients. Hallucinatory content included animals/insects (28.6%), faces e.g. cartoon (28.6%), geometric shapes (28.6%) and well-defined complex figures (14.2%). None of the patients were excluded. CBS was more common in patients with bilateral AMD (81.8%) than in those with unilateral AMD (18.2%).

Conclusion: The incidence rate was higher than the reported range in literatures. Only one-fifth of our patients were aware of CBS.

108. Intravitreal triamcinolone: Is there place for it amongst licensed treatments?

Randeep Sharma, Mabruka Azzaruk, Shahzad Shafquat
Russells Hall Hospital, Dudley

Introduction: Triamcinolone is a synthetic corticosteroid with anti-inflammatory and anti VEG-F properties which help in stabilizing blood retinal barrier and resolution of macular oedema. With the availability of licensed agents, i.e anti-VEG F drugs and steroid implants for management of macular oedema , the relevance of intravitreal triamcinolone (IVTA) is increasingly under question.

Purpose: To evaluate the role of low dose (1-2mg) IVTA in our clinical practice and to report the clinical benefit, re-injection rates and complications.

Method: It was a retrospective audit from 29/12/2008 to 12/04/2013. Data was collected for a follow-up period of 6 months after each injection and statistical analysis performed.

Results: Out of 38 eyes, the commonest indication was refractory diabetic macular oedema followed by post-op cystoid macular edema. IVTA was repeated in 21% (8/38) at 3 months and 25% (7/28) at 6 months.Visual acuity improved in 53% at 2 weeks, 58% at 3 months and 57.1% at 6 months. Maximal effect of IVTA on central retinal

thickness (CRT) occurred within the first 2 weeks with relapse in CRT at 3 and 6 months. No case of severe rise of IOP or endophthalmitis was seen after IVTA.

Conclusion: Low dose IVTA is an effective dose with low risk of complications. Low dose IVTA should be advocated where no licensed or NICE approved treatment alternatives are yet available, e.g., diabetic macular oedema with CRT <400u, Irvin-Gass Syndrome, macular telangiectasia and oedema associated with Cone Dystrophies.

109. The effect of Zinc on Primary Human Foetal Retinal Pigment Epithelial Cells

Safiya Bishar Abdirahman, Talha Soorma, Po-Jung Pao, Imre Lengyel
UCL Institute of Ophthalmology

Introduction: Zinc deficiency is believed to be a causal factor in many ocular diseases, including Age-related Macular Degeneration (AMD), where damage to the retinal pigment epithelium (RPE) is evident. The presence of zinc-binding molecules may be involved in the difficulty of reproducing RPE phenotypes in culture, and hence the need to overcome the potential zinc-deficient environment.

Purpose: We hypothesized that elevation of zinc in the extracellular environment of cultured RPE cells will affect the differentiation of these cells. To prove this, we cultured human embryonic primary RPE (hfRPE) cells in zinc-conditioned media and compared the development of trans-epithelial resistance (TER), immunostaining of proteins specific to RPE cells as well as measure lactate dehydrogenase (LDH) in the culturing medium to test for zinc toxicity.

Method: hfRPE cells were seeded at different densities onto permeable inserts. The cells were grown in specifically-designed culture medium, supplemented with zinc at different concentrations. Cell differentiation was determined by measuring TER, as well as assessing immunohistochemistry of selected proteins. Zinc toxicity was assessed by measuring LDH release.

Results: Low seeding density cultures lacked differentiation; they produced no TER or pigmentation. However addition of zinc increased cell propagation. At higher seeding densities, high TER, normal morphology, pigmentation, and polarization-associated immunoreactivity were found. Addition of zinc affected these characteristics without any detrimental toxic effects.

Conclusion: The results of this research are indicative of the necessity of zinc in RPE differentiation, in order to enhance their morphological structure and propagation in vitro.

110. Effect of gliosis-associated factors on the progenicity and neural differentiation of Müller stem cells

Morteza Afrasiabi, Astrid Limb
Institute of Ophthalmology,UCL

Introduction: Müller cells constitute the radial glia of the neural retina and their main functions are to maintain retinal structure, provide metabolic support to retinal neurons and have stem cell characteristics. Zebrafish retina has the ability to regenerate the retina, ascribed to a population of Müller glia. Human have the same cells but they do not regenerate. Why? It is hypothesized that inflammatory factors released during reactive gliosis inhibit the regenerative functions of Müller glia.

Purpose: Investigate the expression of TRAP1(molecular chaperon protecting cells against oxidative stress) and RKIP9(reduce apoptosis) by Müller stem cells. To examine whether pro-inflammatory cytokines may modify expression of these molecules

Method: Cell culture, western blot and RT-PCR

Results: Müller stem cells produce TRAP1 and RKIP. Levels of TRAP1 mRNA were not significantly modified by TGFβ, HB-EGF or IL-6. However, a significant decrease was observed with TNFα at a concentration of 50 ng/ml. Western blot analysis did not show any effect of the cytokines studied on the levels of expression of TRAP1 or RKIP proteins. The addition of increasing concentrations of TRAP1 appears to increase cell growth (as judged by cell confluence)

Conclusion: TNF-α may play an inhibitory role in the production of TRAP1 and RKIP. TRAP1 may increase Müller stem cell growth.

111. Nine-month outcome of aflibercept intravitreal injections in patients with wet age-related macular degeneration (wAMD) unresponsive to intravitreal ranibizumab

Rachel Hui Fen Lim, Sophie McGlade, Thomas Forshaw, Bhaskar Gupta, Alicia Ng, Peter Simcock
Royal Devon and Exeter NHS Foundation Trust

Introduction: Aflibercept has a longer half-life and duration of action than ranibizumab and it has been suggested that it may benefit patients who responded poorly to ranibizumab.

Purpose: To report the change in vision and central macular thickness (CMT) of aflibercept intravitreal injections in patients with wAMD previously treated with ranibizumab.

Method: This was a retrospective case series. Patients with wAMD who had poor response to ranibizumab were included. Patients received 3 consecutive aflibercept injections then PRN treatment or PRN straight away. Primary endpoints were mean change in best-corrected LogMAR visual acuity (BCVA) and CMT at 9 months. Secondary endpoints were number of injections required and adverse events.

Results: Fifty-six eyes from 53 patients met the inclusion criteria and completed 9-month follow up. Forty-four eyes received 3 injections followed by PRN and 12 received PRN injections straight away. At 9 months, mean BCVA improved from 0.567 to 0.556, mean CMT decreased from 306 to 293. There was an initial good improvement in CMT, which steadily returned to baseline at month 9. Two percent of eyes gained 15 letters or more on BCVA, 2% lost more than 15 letters and the remaining 96% had stable BCVA. The mean number of aflibercept injections given was 5. One endophthalmitis case was recorded.

Conclusion: Intravitreal aflibercept in patients with treatment-resistant wAMD produces an initial improvement in CMT that was not sustained and did not correspond with an improvement in visual acuity.

112. The influence of vitreo-macular adhesion on outcomes following aflibercept therapy for neovascular age-related macular degeneration

Martin McKibbin, Carlo Suter, Tom Willis
Leeds Teaching Hospitals NHS Trust

Introduction: Recent research has suggested that persistent vitreo-macular adhesion may be associated with an increased risk of developing neovascular AMD but it is unclear if it also influences response to therapy.

Purpose: To investigate the influence of vitreo-macular attachment on outcomes following intra-vitreal aflibercept for neovascular ARMD

Method: In a prospective study, case series, eyes with neovascular ARMD were treated with intra-vitreal aflibercept, given as 3 consecutive monthly injections, followed by further injection every 2 months. Spectral domain OCT images were reviewed at each visit to determine the attachment of the posterior hyaloid. Best-corrected visual acuity and retinal thickness were also recorded. Outcomes at months 2 and 6 were compared between the eyes with persistent vitreo-macular attachment (stage 1) and those with posterior vitreous detachment (stages 2 or 3 PVD) at baseline.

Results: At baseline, 30 eyes had stage 1 PVD and 63 eyes had either stage 2 or 3 PVD. Although there was a trend for both greater visual acuity gains and reductions in retinal thickness for the eyes with stages 2 or 3 PVD, this failed to reach significance. Baseline visual acuity and age were negatively associated with visual acuity change and baseline retinal thickness alone was associated with retinal thickness change.

Conclusion: Baseline visual acuity, retinal thickness and age, but not PVD status, are associated with functional and anatomical outcomes following intra-vitreal aflibercept for neovascular ARMD.

113. South Asian diabetic macular oedema treated with ranibizumab (ADMOR)– real-life experience

Charlotte Hazel, Faruque Ghanchi
Bradford Teaching Hospitals NHS Foundation Trust

Introduction: Diabetic macular oedema (DMO) is the leading cause for visual impairment in the working age population in the UK. Ranibizumab has been shown to be effective in treatment of DMO in studies based on mainly Caucasian populations.

Purpose: This study reports 12 months outcome in a cohort of South Asian subjects with DMO treated with ranibizumab.

Method: DMO in 50 eyes of 40 South Asian patients was treated with ranibizumab according to DRCRnet protocol. Visual acuity and central macular thickness were recorded at baseline, 3, 6, and 12 months. Results were compared for eyes with different baseline visual acuities and different baseline macular thicknesses.

Results: Over 12 months, the mean ETDRS VA increased from 55.3±13.3 to 63.9±15.4 letters for all eyes. At 12 months 68% gained 5 or more letters acuity and 18% eyes gained 15 letters or more. During the same period, the mean CMT decreased from 530±129µm to 337±157µm. At 12 months, eyes that had received at least one previous laser treatment (n=41) had a mean letter gain of 9.2 letters, compared to 8.6 for all eyes.

Conclusion: Ranibizumab is safe and effective at reversing vision loss due to DMO in patients of South Asian origin at 12 months. The efficacy of ranibizumab for the treatment of DMO does not appear to be influenced by the ethnicity of patients, and is effective in patients who have had previous laser treatment. Further studies are needed to define longer term outcome in patients of different ethnicity and DMO.

114. Prevalence of diabetic retinopathy, cataract and visual impairment in patients with diabetes in the Copperbelt region, Zambia

Adam Lewis, Manju Chandran, Andrew Elliott, Lorraine North, Geeta Menon
Frimley Park Hospital, Frimley Health NHS Foundation Trust

Introduction: There are few published data on the prevalence of diabetic retinopathy in sub-saharan Africa. Diabetic retinopathy accounts for 4.8% of blindness globally, affecting 1.8 billion people.

Purpose: To determine the prevalence of diabetic retinopathy, cataract and visual impairment in a mixed urban and rural African population in Zambia through a novel screening programme.

Method: All patients attending a mobile screening unit underwent dilated fundus photography. Visual acuity (VA), grade of retinopathy (fundus photography), duration and type of diabetes, BMI, BP and glycaemic control were collected. Sight threatening diabetic retinopathy (STDR) was defined as moderate pre-proliferative retinopathy, equivalent to Grade R2 or M1 of the English Diabetic Retinopathy Screening Programme or worse. Patients with STDR were referred to Kitwe Central hospital for treatment.

Results: 2689 consecutive diabetic patients were screened. Mean age was fifty-six (Range 5 – 92) and 45.4% were male. Mean duration of diabetes was 6.6 years (Range 0- 50 years). The prevalence of any retinopathy, STDR and proliferative diabetic retinopathy (PDR) was 22.5%, 14.8% and 2% respectively. In patients with Type 1 diabetes (n=257), the prevalence of any retinopathy, STDR and PDR was 32%, 19.8% and 3.5% respectively. 13.2% of all patients had cataract. 21.9% of study patients had VA of 6/24 or worse. All patients with STDR (n=593) were referred for treatment.

Conclusion: This study provides baseline information on diabetic retinopathy in diabetic patients attending a diabetic retinopathy screening programme in the Copperbelt region, Zambia.

115. Iluvien® in chronic Diabetic Macular Oedema – real life experience

Zeid Madanat, Faruque Ghanchi, Nicola Hawes, Hayley Higgins
Bradford Teaching Hospitals

Introduction: Iluvien® has been approved by NICE to treat pseudophakic patients with chronic DMO, does early clinical experience with Iluvien® reflect clinical trial data?

Purpose: To describe real life experience using Iluvien® to treat pseudophakic patients with chronic DMO.

Method: Prospective case series of 15 patients, 10 females and 5 males, (mean age of 68 years) treated with Iluvien® Injection for chronic DMO who completed at least 6 months follow up.

Routine clinical data was prospectively entered on Electronic Patient Records including Best Corrected Visual Acuity, Central Retinal Thickness (SD OCT) and Intra Ocular Pressure. Mean BCVA (number of ETDRS letters) mean CRT and mean IOP were calculated for baseline, 2, 4 and 6 months.

Results: The mean BCVA at baseline was 59 letters. This increased by 4 letters at 2 months, 5 letters at 4 months and 11 letters at 6 months.

Mean central retinal thickness at baseline was 370 microns. This was reduced by 15 microns at 2 months, 20 microns at 4 months and 70 microns at 6 months.

Mean IOP in the injected eye was 17mmHG at baseline. Mean IOP at 2, 4 and 6 months was 18, 19 and 19 mmHG respectively.

5 patients had raised IOP during follow up, 3 at 4 months and a further 2 at 6 months. 3 out of these 5 needed IOP lowering drops (monotherapy).

Conclusion: Iluvien® appears to be effective in reducing macular thickness and improves visual function in pseudophakic patients with chronic DMO in the first 6 months. Secondary raised IOP is not infrequent, needing IOP lowering treatment in some cases. Further studies are needed to define long term outcome and safety.

116. Rifampicin orally to treat Chronic CSR patients

Rashi Arora, Niaz Islam
Moorfields Eye Hospital

Introduction: Chronic central serous retinopathy (CSR) is characterised by frequent exacerbations and existing therapies are often ineffective. Rifampicin is known to reduce systemic levels of endogenous glucocorticoids and is reported as safe and effective treatment option in some case reports.

Purpose: To evaluate the role of oral rifampicin in treatment of CSR. Successful outcome was defined as complete resolution of fluid on OCT, subjective resolution of symptoms and improvement in visual acuity.

Method: Retrospective interventional case-series involving review of chronic CSR patients treated with off label oral Rifampicin. Dosage given was 300mg twice daily for 2 months (phase1) and then 300mg daily (phase2) for the next 2 months.

Visual acuity, slit lamp examination and central macular thickness (CMT), using 3D OCT 2000-TOPCON, was recorded at baseline after 2 and 4 months. Baseline FFA was performed. Liver function tests (LFTs), full blood count (FBC) were done at baseline and after 2-3 months. Comparative CMT/visual acuity graph was charted.

Results: 10 eyes of 9 patients were included in this study. 7 were male and 2 were females. Mean age was 44 years. 5 patients were Caucasians, 3 were Asians and 1 had other ethnic background. In 9 cases fluid was subfoveal. 2 patients had history of steroid inhalers. 1 patient reported nausea but opted to continue the treatment .

All patients showed resolution of fluid on OCT Scan, subjective resolution of symptoms and improvement in visual acuity.

Conclusion: This case series suggests that oral rifampicin may be a safe, effective and viable option in patients with CSR.

117. Visual Acuity Outcomes Based on Baseline Central Retinal Thickness in VIVID-DME and VISTA-DME

Sabine Aisenbrey, Frank Holz, Carola Metzig
Multicentre

Introduction: The VIVID-DME and VISTA-DME clinical trials evaluated efficacy and safety of intravitreal aflibercept (IVT-AFL) versus laser in patients with diabetic macular oedema (DME).

Purpose: To evaluate the impact of baseline central retinal thickness (CRT) on visual acuity outcomes at 52 weeks.

Method: Patients were randomized to IVT-AFL 2mg every 4 weeks (2q4) plus sham laser, IVT-AFL 2mg every 8 weeks (2q8) (after 5 initial monthly doses) plus sham laser, or laser plus sham injections. Primary endpoint was change from baseline in best corrected visual acuity (BCVA) at week 52. Integrated analysis was performed on BCVA outcomes in subgroups of patients with baseline CRT of <400µm or ≥400µm.

Results: Mean BCVA changes at week 52 for 2q4, 2q8, laser groups were +10.2, +10.0, +2.9 letters (CRT<400µm), and +12.1, +11.0, -0.1 letters (CRT≥400µm). Mean changes in CRT at week 52 were -68.7, -77.9, +0.8µm (CRT<400µm), and -244.2, -228.6, -96.5µm (CRT≥400µm). Proportions of patients with ≥2-step improvement in ETDRS Diabetic Retinopathy Severity Scale (DRSS) at week 52 were 31.9%, 29.5%, 15.0% (CRT<400µm), and 37.0%, 30.2%, 11.9% (CRT≥400µm). The most common ocular serious adverse events in IVT-AFL-treated patients were cataract (VIVID-DME, 0.7%) and vitreous haemorrhage (VISTA-DME, 0.7%).

Conclusion: Results indicate that improvements achieved with IVT-AFL 2q4 and 2q8 over laser in vision, CRT, and DRSS outcomes were robust and similar regardless of baseline CRT. The consistent DRSS improvement suggests an effect of IVT-AFL not only on DME but also on underlying diabetic retinopathy.

118. Intravitreal Aflibercept for Macular Oedema due to Branch Retinal Vein Occlusion

David Boyer, Peter Campochiaro, Friedrich Asmus
Multicentre

Introduction: VIBRANT was a double-masked, Phase 3 trial to evaluate intravitreal aflibercept (IVT-AFL) compared with macular laser grid photocoagulation for the treatment of macular oedema secondary to branch retinal vein occlusion (BRVO).

Purpose: To evaluate the efficacy and safety of IVT-AFL at Week 52 (W52).

Method: Patients were randomised 1:1 to receive IVT-AFL 2 mg every 4 weeks through W24 and every 8 weeks thereafter or macular grid laser at baseline. In the laser group, eligible patients received IVT-AFL rescue beginning at W24. The primary efficacy endpoint was the proportion of eyes that gained ≥15 letters in best-corrected visual acuity (BCVA) from baseline at W24.

Results: The proportion of eyes in the IVT-AFL and laser groups, respectively, that gained ≥15 letters from baseline to W24 was 52.7% and 26.7% (P<0.001) and from baseline to W52 was 57.1% and 41.1% (P<0.03). The mean improvement in BCVA from baseline to W24 was 17.0 and 6.9 (P<0.0001) and from baseline to W52 was 17.1 and 12.2 letters (P<0.004), respectively. The most common ocular adverse event was conjunctival haemorrhage, occurring in 24.2% (IVT-AFL group) and 15.2% (laser group). Two Anti-Platelet Trialists' Collaboration-defined arterial thromboembolic events occurred, both in the laser group.

Conclusion: In VIBRANT, monthly IVT-AFL provided statistically significant and clinically important visual benefits superior to macular grid laser in macular oedema due to BRVO. Benefits in the IVT-AFL group were maintained with dosing every 8 weeks after W24. No new safety signals were observed with IVT-AFL.

119. Patient satisfaction with conventional vs Invitrea device for intravitreal injection

Saanan Umeed, Mohamed Jama, Annthea Clarke, Hmwe Thynn
Ysbyty Gwynedd

Introduction: Intravitreal injections have become a popular method of treatment for many retinal diseases like AMD, Diabetic retinopathy and retinal vein occlusion. It is important that retinal specialist who use the procedure on daily basis should master the technique of effective injections for patient safety, satisfaction and also reduction of complications.

Purpose: We use 2 different methods of intravitreal injections. Conventional, using a plastic drape covering the eye and the face and use of speculum to keep eyelids apart. The second is using a device called Invitrea designed to make the procedure faster and more predictable with a fixed injection angle, position and depth.

We wanted to know what our patients think and whether they have a preference.

Method: We asked 100 patients who have had multiple intravitreal injections with both techniques on the day of their procedure whether they would prefer either of the injection techniques and if they did why? They were also asked to give a pain score for their injection on the day.

Results: 40% of patients preferred injection with invitrea device as they felt it was less painful, less claustrophobic, comfortable and quick. 34% had no preference and 26% wanted to have the injection using the conventional technique. Pain scores slightly favoured conventional method.

Conclusion: We feel that use of invitrea device has its advantages, not only mentioned above by our patients but also financial as well as shorter learning curve and safety.

120. Characteristics and outcomes of intravitreal Ocriplasmin injections for Vitreomacular traction at Worcestershire Acute Hospitals NHS Trust

Xiaoxuan Liu, Mr Salman Mirza
Worcestershire Acute Hospitals

Introduction: Ocriplasmin (Jetrea) is 'indicated in adults for the treatment of vitreomacular traction

(VMT), including when associated with macular holes'. Since it has become available to the NHS in October 2013, we have treated 21 patients using Ocriplasmin.

Purpose: To report the indications, adherence to NICE guidance [TA297], visual outcomes as compared to clinical trial results from Stalmans et al. (2012), and adverse effects of Ocriplasmin injections at Worcestershire acute hospital.

Method: This is a retrospective, interventional case series involving 21 patients treated at the Worcestershire acute trust with Ocriplasmin for VMT. Information was gathered from patient records including indications for Ocriplasmin injections, adherance to the NICE guidance improvement in visual acuity, resolution of vitreomacular adhesion and macular hole, and adverse outcomes.

Results: 21 patients were treated with Ocriplasmin, all of whom had vitreomacular traction. 1 had macular hole (<400microns) and had successful closure of the macular hole. 2 patients had epiretinal membranes and should not have been treated, and therefore were excluded from outcome measurements. 32% of VMTs resolved compared to 26.5% in clinical trials. 33.3% experienced adverse effects compared to 68.4% in clinical trials.

Conclusion: Although our sample size is small, we have found good outcomes from ocriplasmin injections at our trust compared to clinical trials. We aim to increase awareness of indications for Ocriplasmin in the department and re-audit with a larger sample size to identify indicators for successful outcomes amongst the cohort.

121. Efficacy of four repeated dexamethasone implants for macular oedema secondary to retinal vein occlusion

Mark Lane, Narendra Dhingra
Pinderfields Hospital

Introduction: Published data on eyes needing 4 repeated intravitreal dexamethasone implants (DEX) for macular oedema secondary to retinal vein occlusion(RVO) is sparse

Purpose: To evaluate the efficacy and reinjection interval of four DEX implant for macular oedema secondary RVO and to compare OCT markers in a control group that needed only 2 implants.

Method: Retrospective case notes review of all patients who underwent four DEX implants was carried out looking for indications and timing of repeat implant, baseline and final visual acuity (VA), mean central macular thickness (CMT) and baseline OCT abnormalities. A control group (13 eyes), that needed only 2 injections (matched for CMT and indication of implant)was included.

Results: Of the 17 eyes the study group (8 central retinal vein occlusion, 9 branch retinal vein occlusion), VA improved by 9 letters in the CRVO group and 1 letter in the BVO group after a mean follow of 18 months. The mean re-injection interval was 4.2 months. With each repeated injection, there was a trend towards reduced thickness in CRVO group but not in the BRVO group. In the study group, stability and integrity of the IS-OS junction was seen in 10% (92% in the control group) and baseline epiretinal membrane was seen in 58% (8% in the control group).

Conclusion: Repeated DEX implants reduce CMT thickness with each subsequent injection in the CRVO group. Eyes with disrupted IS-OS junction and baseline ERM are more likely to need 4 implants.

122. "Exudates" and the molecular sieve of the retina

Sanjay Srivastava, David Mansfield, Fatemeh Shams
Inverclyde Royal Hospital

Introduction: Why do lipids in "exudates" collect where they do?

Purpose: Our purpose is to explain why "exudates" have specific forms in different diseases, all characterised by leakage from damaged or abnormal blood vessels.

Method: Clinical observation, comparing photographs, angiograms and optical coherence tomography studies in patients with exudates taking the form of a macular star, of spots and rings, and of continuous sheets, for a variety of clinical diagnoses.

Results: A half macular star is most informative. The "exudate" does not cross the inner and outer nuclear layers. These are impervious to the lipid molecules; yet we know from the efficacy of Bevacizumab that a big protein is able to traverse the whole thickness of the retina from the vitreous. The lipid, in contrast to that protein, is able to spread only within the outer plexiform layer (OPL). Where leakage is from an aneurysm that has developed following a tributary vein occlusion, retinal oedema increases the separation of the elements of the tissue. It is a reflection of that damage that lipid does not accumulate in the immediate vicinity of the source of the leak, nor in the OPL on the proximal side of the macula: the serum spreads further afield. Paradoxically, the presence of "exudates" in the non-oedematous, far side of the macula is actually a sign of the relatively greater health of the tissue there.

Conclusion: Only when the plexiform layer has its proper compact structure does it act as a "molecular sieve".

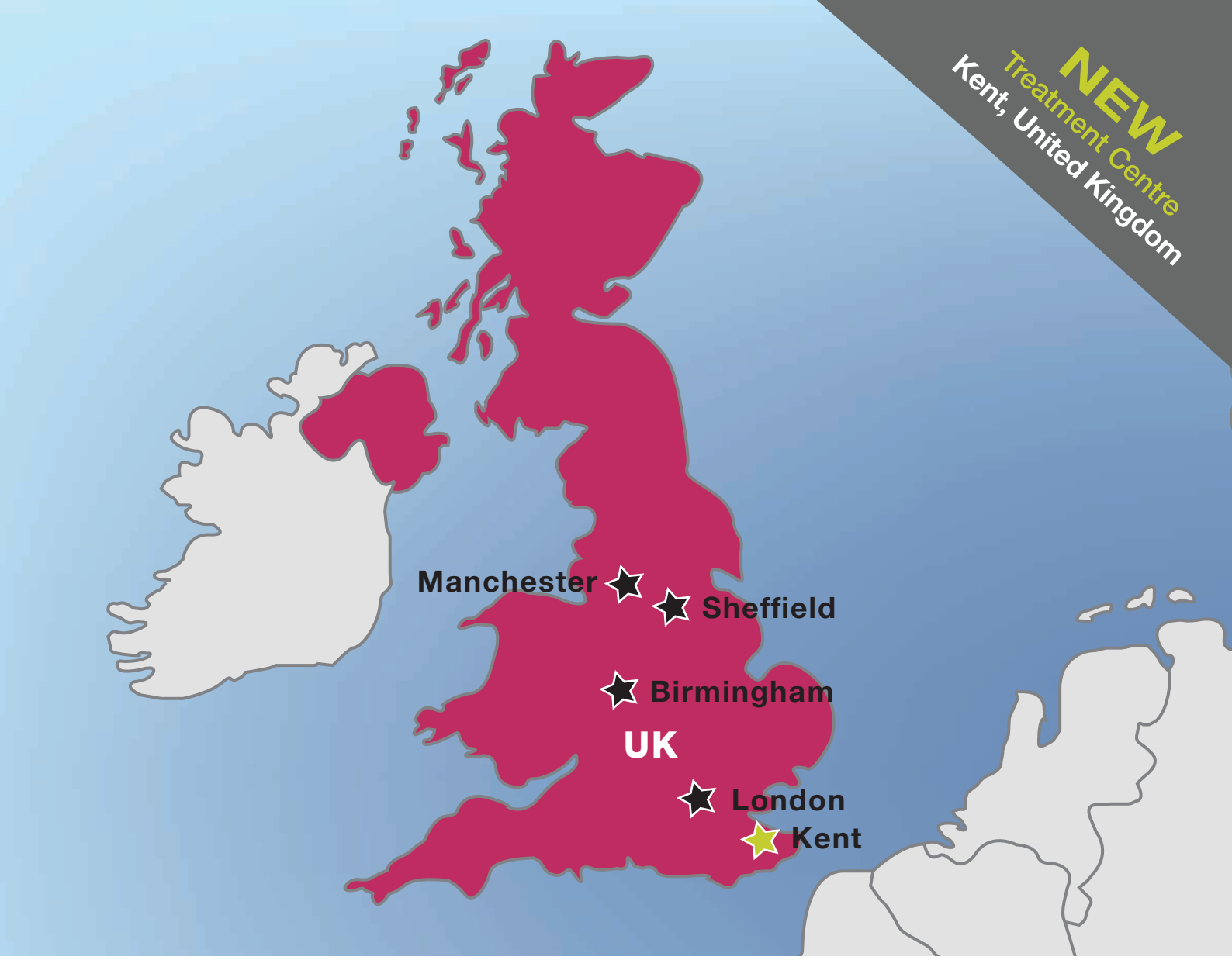
123. Proposed diagnostic criteria for choroidal tumors by Optical Coherence Tomography

Mohamed I Nowara, Ahmed M Habib, Emad S Elsawy, Hisham M Hassan, Ihab A Mohamed, Ashraf H Soliman, Rehab A Ismail
Retina Consulting Center

Introduction: Currently, there are no pathognomonic OCT findings for choroidal tumors

Purpose: evaluating SD-OCT using choroidal enhancement technique in detecting diagnostic criteria of choroidal tumors

Method: case series of 26 eyes of 25 patients with recently diagnosed choroidal tumors were imaged by three SD-OCT machines. Qualitative analysis included the overlying retina, tumor surface, light penetration (intra lesion reflectivity) and discrimination from surrounding choroidal tissue



Fewer injections. **More UK locations.**

Now available in Kent and four other locations in the UK, the Oraya Therapy™ Stereotactic Radiotherapy for Wet AMD is reducing injections while maintaining vision* for more Wet AMD patients. This non-invasive, low-energy X-ray therapy is a simple outpatient procedure and is intended as a one-time treatment.

Learn how fewer injections and more locations can help your wet AMD patients.
Visit us at **Stand 19** to learn more about the latest treatment information.

READ THE LATEST FROM ORAYA AT WWW.ORAYAINC.COM

- Oraya Therapy sponsors the AMD Alliance International Awareness event at the UK House of Commons
- Carl Zeiss Meditec AG announces investment in Oraya Therapeutics, Inc.
- Free download of INTREPID 2 year results in *Ophthalmology* (January 2015)

*The INTREPID 2-year results are published in *Ophthalmology*, January 2015. The targeted population includes wet AMD patients with lesion size ≤4 mm and macular volume >7.4 mm^3 as measured by Stratus OCT™.

ORAYA THERAPEUTICS

www.orayainc.com

Visit Stand 14

Righton

STATE OF THE ART REFRACTION

RVII Remote Vision

- Unique head up display
- Wireless control

Retinomax 3 Series

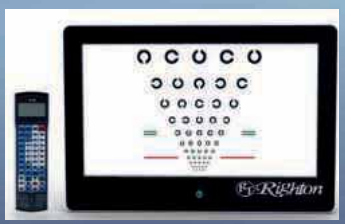
- Hand held Auto Refraction & Keratomtery
- Wireless data transfer to RVII

ALM-ZERO

Automated Lensmeter
Data transfer to RVII

Righton RG-24 LED Test Chart

Intelligent link to RVII



SEE MORE PRODUCTS ONLINE:
www.bibonline.co.uk
E: sales@bibonline.co.uk
T: 01438 740823

BiB
OPHTHALMIC INSTRUMENTS

Results: 26 eyes were clinically classified into: choroidal metastasis (10); choroidal hemagiomas (diffuse 1 , circumscribed 3); choroidal melanoma (4 eyes); choroidal nevi (melanotic 6 , amelanotic 2). SD-OCT was able to identify precise criteria for each tumor type, and distinguish tumor landmarks from the surrounding normal choroid. Qualitative analysis revealed: amelanotic nevi and amelanotic melanoma appear as homogenous low to medium reflective band with visible compressed choroidal vessels, amelanotic melanomas portray adjacent choroidal congestion; melanotic nevi and choroidal melanomas appear as highly a reflective band in the anterior choroid with shadowing and obscuration of choroidal vessels and inner sclera, with signs of activity intrinsic to melanomas; choroidal hemangiomas in active stages have a mamillated surface and a smooth surface in quiescent stages. They appear as a medium/low reflective interrupted band with shadowing and obscuration of choroidal vessels and inner sclera; choroidal metastasis appear as lobulated masses of low reflectivity, allowing deep penetration of light, with signs of activity and loss of the normal choroidal pattern.

Conclusion: SD-OCT is efficient in detecting pathognomonic criteria for different types of choroidal tumors, and can be used as a non invasive diagnostic tool.

124. Macular laser for diffuse and focal diabetic macular oedema – evaluation of response to treatment using optical coherence tomography

Aidan Benson, Mohammed A Albeedh, Zia I Carrim
Leeds Teaching Hospitals NHS Trust

Introduction: Response to macular laser treatment for diabetic macular oedema (DMO) is conventionally assessed using visual acuity and biomicroscopy. Optical coherence tomography (OCT) allows an objective and quantitative evaluation of response.

Purpose: We undertook such an evaluation in anti-VEGF treatment-naïve eyes with DMO in our department.

Method: All macular lasers performed between 1st January 2013 and 1st July 2014 were identified using our department-wide electronic patient record (Medisoft). Eighty anti-VEGF naïve eyes with pre- and post-laser OCT scans were identified. Scans had to be within four weeks before and no sooner than 12 weeks after laser. All scans were performed using a Heidelberg Spectralis. Oedema was focal if it straddled no more than 2 quadrants within the 6mm ETDRS circle centred on the fovea and diffuse otherwise. Proprietary software was used to identify and measure the maximum retinal thickness (MRT) of an oedematous area before and after laser treatment.

Results: Overall, macular laser was associated with a statistically significant reduction in MRT (438u vs 397u, p=0.02). The mean percentage change in MRT was -4.7%. Oedema was diffuse in 35 (44%) eyes and focal in 45 (56%) eyes. Laser was associated with a statistically significant reduction in MRT in eyes with focal oedema (415u vs 387u, p=0.003) but not in eyes with diffuse oedema (446u vs 409u, p=0.21). The mean percentage change in MRT was -6.1% and -2.7%, respectively.

Conclusion: Macular laser offers, at best, a small reduction in retinal thickness. The effectiveness of this modality in eyes with diffuse oedema is questionable.

125. Efficacy and safety of intravitreal dexamethasone implants for macular oedema secondary to retinal vein occlusion; 3 year experience at 3 centres

Aisling Higham, Sarita Jacob
Heart of England NHS Foundation Trust

Introduction: NICE recommended the intravitreal dexamethasone implant, Ozurdex for macular oedema (MO) secondary to retinal vein occlusion (RVO) in July 2011.

Purpose: Evaluate the efficacy and safety of intravitreal dexamethasone implant for RVO looking at the retreatment interval.

Method: A retrospective paper and electronic case note review of all patients who had an intravitreal dexamethasone implant for retinal vein occlusion between January 2012 and November 2014 across three hospital sites. 141 eyes were included of 139 patients (65 CRVO, 76 BRVO). Data analysed using Microsoft Excel.

Results: 240 intravitreal dexamethasone implants were administered across the period. After the 1st implant 48% patients had at least a 10 letter gain in VA and 33% had at least a 15 letter gain in VA. At our centres the mean time interval between the administration of the 1st and 2nd implants was 36 weeks. 1 patient developed endophthalmitis and 2 had vitreous haemorrhage. 43/141 (30.5%) eyes were treated for raised intraocular pressure, but only required topical treatment. 22/141 (15.6%) patients were switched to ranibizumab during this period.

Conclusion: Treatment with intravitreal dexamethasone implant for macular oedema in RVO led to anatomical and visual improved outcomes similar to those seen in other studies. Earlier retreatment could benefit patients who relapse earlier improving long term results. Combination or sequential therapy of anti VEGF and dexamethasone implant may be a promising option.

126. Efficacy and safety of Lucentis for Diabetic Macular Oedema in a Tertiary Centre

Freddy Beer, Sam Khandhadia, Andrew Malem, Christina Rennie
Southampton General Hospital Eye Unit

Introduction: Lucentis has been shown to be an effective and safe treatment for diabetic macular oedema (DMO) in clinical trials, however can the same conclusions be drawn from a 'real-world' population over 1 year.

Purpose: We conducted a retrospective analysis of patients receiving Lucentis for DMO at a tertiary centre over 1 year to enable comparison of efficacy and safety profile against the RESTORE trial.

Method: We included all consecutive patients receiving Lucentis for DMO for at least 12 months. Patients receiving previous intravitreal anti-VEGF injections were excluded. The primary outcome measure was mean average change in best corrected visual acuity (BCVA). Secondary end points included mean change in BCVA, mean change in central macular thickness (CMT - µm) and frequency of serious adverse events.

Results: 62 eyes (47 patients) were included. Each eye received a mean of 7.6 injections over 1 year. Average time to injection from listing was 29 days. There was a significant improvement in mean average change in BCVA of +5.4 letters at month 12 compared to baseline ($p<0.001$). Both mean change in BCVA (+5.6 letters) and CMT (-133µm) also significantly improved at month 12 compared to baseline ($p<0.001$). No endophthalmitis was reported, however one patient developed an ischaemic stroke.

Conclusion: This study provides a benchmark for ophthalmologists who treat DMO and demonstrates that in the "real world" setting Lucentis appears to have a similar efficacy and safety profile to published clinical trials such as the RESTORE study.

127. Real world outcome of providing aflibercept according to the VIEW protocol for AMD

James Talks
Newcastle Upon Tyne Hospitals NHS Foundation Trust

Introduction: Aflibercept has the potential advantage of allowing two monthly visits if the VIEW protocol of 3 monthly initial injections followed by 2 monthly injections for a year is adhered to. Providing ranibizumab with 4 weekly visits has proved difficult in clinical practice.

Purpose: To assess the outcome of a consecutive series of patients treated at one centre with aflibercept for AMD following the VIEW protocol, who should have had one year follow up at the time of data cut off.

Method: The visual acuity outcomes and adherence to protocol at one year of a consecutive series of all patients who started treatment for AMD with aflibercept between March and September 2013 in our centre was analysed. Last vision was carried forward.

Results: Data was collected on 200 eyes of 188 patients. 13/188 (6.5%) didn't reach one year of follow up. Mean starting vision was 56.5 ETDRS letters, 46/200 (23%) had ≥ 70 letters (approx. 6/12). Mean VA at one year 62 letters, gain of 5.5; 41.5% ≥ 70; 5>15 letter loss (2.5%); 25/200 (12.5%) >6 letter loss. 20/175 (11.5%) of those reaching one year had had less than the expected 8 injections.

Conclusion: Attendance for follow up was good and 88.5% of patients received the number of treatments expected showing that we were able to implement the protocol and it was largely acceptable to patients. The visual acuity outcomes compare reasonably to trial outcomes. 5.5 mean letter gain compared to 8.5 in view.

128. NICE guided ranibizumab treatment of Centre-Involving Diabetic Macular Oedema: outcomes associated with baseline characteristics at 6 months

Archana Airody, Divya Venugopal, Aleksandra Mankowska, Fiona Bailey, Nicola Topping, Richard Gale
York Teaching Hospitals NHS Foundation Trust

Introduction: NICE TA -274 allows DMO of >/=400 microns to be treated with ranibizumab. RESTORE and DRCR.net evaluate outcomes in cohorts without baseline OCT thickness restriction.

Purpose: To evaluate baseline characteristic associations with outcomes of a NICE guided cohort.

Method: Case notes from clinic patients with 6 months (7 visit) attendance were retrospectively reviewed. Mean (standard deviation) is presented for continuous normal data, repeated measures ANOVA for change and $p<0.05$ indicates statistical significance.

Results: 62 eyes of 48 patients with a mean age of 67.23 (SD 10.93) years were included. 85.41% had type 2 diabetes, with a mean duration of diabetes of 15.41 (SD 9.4) years and a mean duration of macular oedema of 53.40 (SD 43.26) months. Baseline BCVA of 59 (SD 17.50) ETDRS letters improved to 63 (SD 16.39), CRT of 457 (SD 84.14) microns decreased to 338 (SD 91.86) with a median number of injections of 6 (Range 3-7).

Foveal avascular zone abnormalities and duration of macular oedema of >24 months all had a trend towards worse VA and CRT improvement however only duration >24 months and CRT reached statistical significance (p=0.046, ANOVA).

Conclusion: Ranibizumab for DMO results in a mean VA gain of 4 letters with a median of 6 injections. Macular oedema of >24 months at baseline resulted in significantly less CRT improvement.

129. The incidence of severe diabetic macular oedema (≥ 400µ) in the ethnically diverse population of north-east London

Alastair Porteous, Roopa Vemala, Muhammed Nazir, Cordelia McKechnie, Sudeshna Patra
Whipps Cross Hospital

Introduction: The National Institute of Clinical Excellence (NICE) technology appraisal (TA) 274 approved the use of intravitreal ranibizumab (Lucentis) for the treatment of DMO that measured ≥ 400µ in the central macular [central subfield (CSF) thickness].

Purpose: To determine whether the ethnically diverse population of north-east London would have a higher incidence of DMO ≥ 400µ than estimated by NICE.

Method: The inclusion criterion was new patients referred from the local diabetic eye screening programme with sight-threatening retinopathy. The CSF thickness was measured on the Zeiss Cirrus HD OCT. Baseline demographic data included ethnicity data.

Results: Forty-seven out of 85 patients from all ethnic groups (55.3%) had a confirmed diagnosis of maculopathy or M1 disease in at least one eye. Of those with M1 disease, 23.4% fulfilled NICE TA 274 treatment eligibility criteria of CSF thickness ≥400µ.

Forty-nine out of 85 (57.6%) patients belonged to Black, Asian and minority ethnic (BAME) groups. 53% patients belonging to BAME groups had a confirmed diagnosis of M1 disease in at least one eye and 23% fulfilled NICE TA 274 treatment eligibility criteria.

According to the NICE costing template the percentage of patients with DMO with a central retinal thickness of ≥400µ was estimated to be 26%.

Conclusion: Despite the ethnic diversity of the population of north-east London, there appeared to be no difference in the percentage of eligible patients compared to NICE estimates.

130. The incidence and outcome of post-cataract surgery cystoid macular oedema (CMO) in an ethnically diverse and predominantly diabetic population

Fotios Tsogkas, Sudeshna Patra
Bartshealth NHS Trust

Introduction: Is the incidence and outcome of post-cataract surgery CMO different in multi-ethnic and diabetic eyes?

Purpose: What is the rate and outcome of cystoid macular oedema (CMO) following cataract surgery in an ethnically diverse and predominantly diabetic population?

Method: The electronic records of 262 eyes who had uncomplicated cataract surgery in a Retina firm were analysed. No eyes received routine post-operative prophylaxis with non-steroidal anti-inflammatory (NSAID) eyedrops. Eyes that developed post-operative CMO were treated with a course of ketorolac and dexamethasone eyedrops for 6-8 weeks.

Main outcome measures: (1) Rate of post-operative CMO in the total study population and defined sub-groups (2) Final visual acuity outcome in eyes that developed post-operative CMO.

Results: There was a history of diabetes in 57% eyes and 59% of the patients were from black and minority ethnic groups (BME).
The overall post-operative CMO rate was 7.63%. In eyes with no history of diabetes the post-operative CMO rate was 3.5%. In the sub-group of eyes with pre-operative diabetic retinopathy and normal optical coherence tomogram of the macula a higher rate of 13% post-operative CMO was seen. In BME sub-group the post-operative CMO rate was 10.5%. Of the eyes that developed post-operative CMO 90% achieved ≥6/12 acuity after treatment.

Conclusion: The rate of post-operative CMO was higher in diabetic patients and patients from the BME population. Majority of eyes treated with NSAID eyedrops for post-operative CMO achieved a good final visual outcome.

131. Visual outcomes after switching treatment from IVI ranibizumab to aflibercept in wet AMD patients resistant to ranibizumab

Ketevan Pachkoria, Keshma Karia, Aires Lobo
Moorfields Eye Unit@ Bedford

Introduction: A significant proportion of wet AMD patients have persistent retinal exudation despite regular ranibizumab treatment

Purpose: To describe the treatment response to aflibercept in wet AMD patients resistant to ranibizumab treatment

Method: From November 2013 till June 2014 all patients receiving IVI injections of aflibercept at Moorfields Eye Unit @ Bedford after previous injections with ranibizumab were analysed and collected in a database and retrospectively reviewed. Visual outcome were analyzed including time frame before, during and after the aflibercept treatment and compared with visual outcome data of ranibizumab.

Results: 93 eyes of 82 patients were included in the study. All has undergone previous ranibizumab injections, the average number of which was 16.9 (5-37). For the total group the mean visual acuity (VA) before the first ranibizumab injection was 58.51, and after the last ranibizumab injection was 64.33 letters. Mean VA changed from 64.33 before the first aflibercept injection to 62.35 letter after the last aflibercept injection. Interestingly, 39 out of 69 (56.5%) cases that showed functional improvement with ranibizumab therapy did not gain VA after aflibercept treatment. Only 11 out of 24 cases that did not show functional improvement with ranibizumab treatment gained VA after aflibercept injection.

Conclusion: Aflibercept could be a valuable alternative for wet AMD patients resistant to ranibizumab. Studies on intraocular pharmacokinetics of intravitreal Aflibercept injection in human eyes are needed to better understand and accurately determine the durability of this new anti-VEGF agent.

132. One year Diabetic Macular Oedema (DMO) treatment with intravitreal (IVT) anti Vascular Endothelial Growth Factor (anti VEGF), injections. Real world results

Spyridon Mourtzoukos, Dimitar Brankov, Kate Bolton, Veronika Mass Tur, Sarah Meredith
Queen Alexandra Hospital

Introduction: After the NICE approval and the college recommendations for the anti VEGF treatment in DMO, a newly formed service started November 2013 at Queen Alexandra Hospital Portsmouth. Are the results and the practice reflecting the results from the published studies?

Purpose: To evaluate the safety and the efficacy of the treatment with IVT ranibizumab (Lucentis), in patients with DMO meeting the NICE criteria for treatment.

Method: Retrospective analysis of the data from 162 patients received treatment with IVT Lucentis injections.48 patients had bilateral pathology and the total no of eyes was 210.

Results: There were no incident of endophthalmitis reported. One patient admitted with ischaemic cerebrovascular episode 2 months after the loading dose. Average of follow-up was 7.9 months (from 3-13 months), average of initial logMAR visual acuity was 0.52, central retinal thickness (CRT), was 469. 8 and volume was 10.75. The average of injections per treated eye was 3.87. The average post treatment logMAR visual acuity 0.38, CRT 321.8, volume 9.03.

Conclusion: There were four group of patients. Patients without previous treatments, patients with previous laser, patients with previous injections and patients with previous laser and injections. All group had improvement and there is no statistical difference between them. Further follow-up is necessary, to include large number of patients with more than 1 year treatment period.

133. Intra-vitreal ocriplasmin for symptomatic vitreo-macular traction (VMT) – the Yorkshire Retina Society experience

Richard Gale, Grigorios Tzamos, Martin McKibbin, David Steel, Gavin Walters, Murtaza Mookhtiar
Leeds Teaching Hospitals Trust

Introduction: What is the overall success rate of intra-vitreal ocriplasmin and does this vary by centre, indication and the number of baseline positive predictive factors (PPFs)?

Purpose: To report early experience with intra-vitreal ocriplasmin for symptomatic VMT and investigate the role of baseline factors in predicting treatment success.

Method: In a multi-centre, retrospective, case note review, baseline factors and response to treatment were recorded. The following PPFs were included: male sex, age< 65 years, phakic status, focal VMT (<1500 μm), small macular hole (<400 μm diameter) and absence of epi-retinal membrane (ERM). Treatment success was defined as release of VMT within 1 month.

Results: Release of VMT within 1 month was seen in 12 of the 32 eyes (37.5%). Treatment success ranged from 20%-67% in the 6 centres and from 37% in the eyes without macular hole to 42% in the eyes with macular hole. For the 9 eyes with 2 or fewer baseline PPFs, VMT release was seen in 11.1%. For 23 eyes with 3 or more baseline PPFs, release of VMT was seen in 34.7%.

Conclusion: Early experience with intra-vitreal ocriplasmin has achieved outcomes that are comparable to those reported in clinical trials. The success rate varies by centre and the number of baseline PPFs, suggesting that case selection is very important.

134. 'Treat and Extend' versus 'Pro Re Nata' dosing regimens for Ranibizumab in the Treatment of Neovascular Age Related Macular Degeneration

Joshua Luis, Seyedmahdi Manafi, Harry O. Orlans, Saad Younis
Western Eye Hospital

Introduction: Intravitreal anti-VEGF treatments have revolutionised the management of neovascular age-related macular degeneration (nARMD) and demand on services is steadily increasing. There is therefore a growing need to optimise dosing to allow for adequate treatment whilst minimising the number of patient visits and injections.

Purpose: To compare the effectiveness of two treatment regimens for Ranibizumab in newly diagnosed nARMD.

Method: Retrospective observational longitudinal study of consecutive patients with newly diagnosed nARMD in a single centre between April 2013 and April 2014 (n=102). After an initial loading phase, patients were commenced on either a pro re nata (PRN, n=57: monthly visits with injections as required) or treat and extend (TaE, n=45: injection at every visit, increasingly spaced out if remaining 'dry') regimen. Best corrected logMAR visual acuity (BCVA) and central retinal thickness (CRT) were analysed at 6 months.

Results: Baseline BCVA for the PRN and TaE groups was 0.64±0.30 and 0.56±0.29 respectively, whilst baseline CRT was 335±95µm and 328±83µm. At 6 months, mean changes in BCVA were 0.00 (p=0.992) and -0.18 (p=0.052) respectively, changes in CRT were -48 (p=0.110) and +17 (p=0.700). The mean numbers of injections given was 5.05 and 5 respectively. The mean interval between clinic appointments was 31 and 47 days respectively.

Conclusion: Both regimens showed effectiveness in maintaining BCVA and CRT, with no statistically significant differences. Whilst the two groups received a similar number of injections, the TaE group was required to attend clinic less frequently.

135. Diabetic Maculopathy OCT imaging clinic – 2 year risk for progression

Gerald Lewis, Christina Rennie
Southampton Eye Unit

Introduction: OCT imaging clinics are now well established to manage patients referred from the diabetic eye screening programme with maculopathy but the risk of progression within these clinics is not known.

Purpose: To identify the retinal features that predict development of clinically significant macular oedema (CSMO) over a two year period.

Method: Retrospective case note and OCT review of the first 100 patients to enter the OCT clinic pathway. Each was assessed for baseline retinal and OCT features and the number who developed CSMO at 6,12,18 and 24 months

Results: At baseline 64 patients were given follow-up within the imaging clinic, 29 referred into the diabetic eye clinic (5 for non-diabetic reasons), and 7 discharged to screening. Of the 64 initially booked for follow-up in the imaging clinic 8 failed to attend, 22 were discharged, 1 remains under follow-up, and the remaining 33 developed progressive maculopathy over the following 24 months requiring referral. 21/48 (44%) with no fluid at baseline were referred over 2 years compared with 12/16 (75%) with borderline fluid on baseline OCT (significantly different, p=0.04). 14/28 (50%) with exudates<1dd and no fluid at baseline were referred over 2 years compared with 10/20 (50%) with exudates>1 dd and no fluid at baseline. Over the 2 year period 43% were discharged back to screening

Conclusion: Borderline changes on the baseline OCT predicted risk for progression and referral to the diabetic eye clinic. Location of exudates at baseline did not affect risk of progression with half requiring referral for further review.

136. Intravitreal Aflibercept (Eylea) treatment of Neovascular AMD in patients with a sub-optimal response to conventional Intravitreal Ranibizumab therapy

Osama Giasin, Naser Ali, Mohamed Elmi, Mohammed Riaz Ahamed, Raghu Ram, Amit Gaur
Royal Glamorgan Hospital

Introduction: We wish to share our personal clinical experience of the use of Aflibercept (Eylea) in patients with Neovascular Age Related Macular Degeneration with a sub-optimal response to Ranibizumab (Lucentis) therapy

Purpose: To evaluate the efficacy of intravitreal aflibercept in cases of neovascular age-related macular degeneration (AMD) with a sub-optimal response to intravitreal ranibizumub.

Method: Retrospective case series review (patient notes and electronic database) of 40 eyes (37 patients) with persistent macular fluid, despite loading phase and continuous six month treatment with Ranibizumab. Patients were switched to Aflibercept, treated as per the approved protocol and continue to be followed-up to date.

Results: By the last follow-up visit patients had received an average of 5.8 injections (range 4-8). Complete resolution of macular fluid was seen in 10 eyes (25%). Resolution of pigment epithelial detachment (PED) was seen in 7/20 Eyes. Average decrease in the central foveal thickness measured 29 microns. 18 (45%) eyes showed improvement in visual acuity (average -2.75 letters gained, range -37 to +10 letters) and remained stable (<5 letters loss) in 15 eyes (37.5%) .No local or systemic complications were noted.

Conclusion: There was significant anatomical improvement (OCT-guided) in patients switched from Ranibizumab to Aflibercept treatment. The vision improved or remained stable in 82.5% of cases. Aflibercept should be considered an effective alternative form of treatment for wet AMD patients with a sub-optimal response to Ranibizumab therapy.

137. Patient Perspective on Symptomatic Self-Monitoring of Diabetic Eye Disease

Angela Holden, Korina Theodoraki, Marie Tsaloumas, Derek Kyte, Melanie Calvert, Alastair Denniston
Queen Elizabeth Hospital Birmingham

Introduction: Diabetic Eye Disease is a major burden to society. An alternative to our current model of 'routine' reviews in the hospital eye service would be to depend more on self-reporting of deterioration (between less frequent reviews), however it is not known whether patients with diabetic eye disease can reliably recognise deterioration in their disease.

Purpose: To explore whether patients with diabetic eye disease recognise warning symptoms or loss of visual function, and investigate their access to the hospital eye service when this occurs.

Method: Prospective questionnaire of 56 consecutive patients with known diabetic eye disease attending a university hospital. Part 1: NEI VFQ25 subset for General, Distance and Near vision. Part 2: questions regarding self-reporting of visual decline.

Results: 16.4% of the patients reported that their vision was poor or very poor, with the majority reporting difficulty in near vision (eg 63.6% for reading) and distance vision (eg 70.9% for going down stairs).

62.5% reported that when tested in clinic their vision was as expected, whereas 21.4% reported that it was better and 14.3% worse than expected. Over half felt that they could never (31.5%) or only rarely (20.4%) identify a deterioration in their disease. 76.8% reported worrying about their eyesight (8.9% always, 8.9% often, 21.4% sometimes, 37.5% rarely); areas identified in open questions were 'blindness' and 'loss of independence'.

Conclusion: Most patients with diabetic eye disease thought they could never or only rarely identify deterioration in their eye disease. Further investigation is required into perceived vs objective deterioration, and symptoms-based vs self-test-based strategies.

138. Renal transplantation improves retina in husband's kidney disease

Ning Brigid, Kun Yin, Monica Michelotti, Rita Prajapati, Simon Kelly
Royal Bolton Hospital

Introduction: Patients with membranoproliferative glomerulonephritis type II (MPGN II) may develop retinal drusen and which are similar to the deposits that occur in renal glomerular membranes.

Purpose: To report a unique clinical observation of resolution of subretinal fluid in MPGN II following renal transplantation with implications for disease pathogenesis.

Method: Case history with 5 years of clinical images. Review of literature

Results: A male, age 45, with biopsy proven MPGN II disease presented with recent retinal symptoms. Macular pigmentary changes and cuticular or basal laminar drusen with shallow subretinal fluid was observed in both eyes. Fluorescein angiography was significant for the 'stars in the sky' early hyperflouresence sign. Subsequently increasing subretinal fluid was observed on serial SD-OCT imaging with worsening of vision. His renal function deteriorated throughout this period. His unrelated wife was found to be an immunologic tissue match. He underwent renal transplant with live kidney donated by his healthy wife. Following renal transplantation vision improved and subretinal fluid resolved in both eyes. Macular pigmentary changes also improved bilaterally.

Conclusion: The subretinal fluid volume increased over a period of 5 years and correlated with declining renal function and regressed following renal transplantation and improved renal function. No previous reports have correlated subretinal fluid with renal function and we believe this is a unique observation. Investigation into whether specific cytokines may be involved in improving retinal structure and function after renal transplantation may be useful for development of additional treatment options for retinal disorders and disease pathogenesis.

139. Chronic diabetic macular odema patients treated with ranibizumab explored using a novel visual method of clinical outcomes presentation following 12 months of such treatment in real world DGH clinical audit setting

Kirti Jasani, Andrew Walkden, Jiten Morarji, Brigid Ning, Emma McKenna, Evangelos Sioras, Simon Kelly
Royal Bolton Hospital

Introduction: Diabetic macular odema (DMO) is the leading cause of blindness in working age. In 2013 ranibizumab was approved by NICE but only for those DMO patients with central retinal thickness (CRT) of ≥400µ. No recommendation was made for patients with CRT <400µ.

Purpose: To report the clinical outcomes of chronic DMO patients of all retinal thickness treated in a real world NHS setting.

Method: A retrospective review was undertaken on DMO patients completing 12 months of follow-up with Ranibizumab therapy administered with 3 monthly loading doses and then a pro re nata dosing regime. Baseline best corrected visual acuity and CMT were compared to the same parameters at 12 months in the context of the number of injections given.

Results: Data from the first 133 patients to achieve 12 months follow-up was extracted, of which 108 patients had a full dataset. At 12 months a mean gain in vision of +3.56 ETDRS letters (p= 0.048) occurred whilst at the same interval, CMT reduced by a mean of 144.5 µm (p=<0.001). During this period a mean of 7.0 injections were administered to each patient (n=108)

Conclusion: A statistically significant improvement in visual acuity and reduction in OCT thickness was achieved at 12 months in NHS practice

146. Diffuse macular leakage with peripheral capillary non-perfusion - a distinct angiographic phenotype of diabetic retinopathy?

David Burton, Zia Carrim
St James's University Teaching Hospital

Introduction: Diabetic macular oedema (DMO) has been associated with peripheral retinal ischaemia.

Purpose: We examined this association in patients with treatment-resistant diffuse DMO using widefield fluorescein angiography (WF-FA)

Method: WF-FA images of 20 eyes of 11 patients with DMO were studied. Patients were identified consecu-tively between 1st January and 1st July 2014 and included if they had evidence of limited or no re-sponse to treatment (macular laser and/or intravitreal anti-VEGF therapy) and a WF-FA showing diffuse DMO. Diffuse DMO was defined as late hyperfluorescence involving ≥ 75% of the macula. Features of peripheral ischaemia, namely perivascular staining and capillary dropout, were sought. Retinal non-perfusion amounting to 10 disc areas (DA) or more was deemed significant.

Results: Mean age of participants was 58.5 years. The biomicroscopic stage of retinopathy at the time of angiographic assessment was severe nonproliferative in 16 (80%) eyes, moderate nonproliferative in 3 (15%) and mild nonproliferative in 1 (5%). All (100%) eyes with diffuse DMO had at least 10 DA of peripheral non perfusion.

Conclusion: Diffuse DMO is associated with significant capillary non-perfusion. This may suggest that peripheral ischaemia is at least contributory to diffuse DMO. Severe nonproliferative retinopathy with diffuse DMO should prompt WF-FA.

147. Influence of duration of type 1 diabetes on prevalence of diabetic retinopathy and visual acuity as detected in a Diabetic Retinopathy Screening Programme

Alasdair Warwick, Miss Radhika Krishnan, Dr Andrew Brooks
University Hospital Southampton NHS Foundation Trust

Introduction: Epidemiological studies of diabetic retinopathy (DR) have not reported prevalence of DR or levels of visual acuity (VA) by duration of type 1 diabetes (T1DM).

Purpose: To assess the prevalence of DR and VA level identified by the Southampton Diabetic Eye Screening Programme in a cohort of T1DM patients and determine how these relate to duration since T1DM diagnosis.

Method: The DR status and VA level as detected at annual DR screening in 2010 of a cohort of 478 T1DM patients were analysed against duration of T1DM.

Results: The prevalence of any DR (grade>R0M0) was 72.2% and of referable DR (preproliferative-R2/ proliferative-R3/ maculopathy-M1) 16.3%. When divided into 4 groups by T1DM duration [a)0.0-9.9; b)10.0-19.9; c)20.0-29.9; and d)>30 years] the percentage prevalence of R3 and M1 were respectively: a)0.00 and 0.01; b)4.07 and 15.45; c)7.55 and 16.98; d)15.65 and 11.30. Differences between T1DM duration and R3 and M1 prevalence showed a statistically significant trend (p<0.01). Mean VAs (LogMAR) of a)0.09; b)0.10; c)0.13; d)0.13, showed slight deterioration with increasing duration (p>0.05).

Conclusion: M1 and R3 were rare in the first 10 years of T1DM. Prevalence of R3 approximately doubles every 10 years thereafter, while M1 is around 15.5-17% between 10-30 years duration, dipping slightly to 11.3% for >30 years. The strikingly low prevalence of DR in patients with T1DM for <10 years may have important implications for retinal screening intervals.

Method: Clinical audit of 90 eyes with DMO undergoing intravitreal ranibizumab using 3 loading followed by PRN dosing. All had center involving chronic DMO despite prior macular grid laser. We designed a novel 2x2 quality box to visually present change in retinal structure and function.

Results: 12 month outcomes are available for 20 eyes, mean age 65 years. Baseline VA; 56 letters (range 17-76). Baseline CRT; 442µ (range 278- 770). At 12 months mean VA was 65 letters (range 22-88) and mean CRT was 336µ (range 245 -511 µ). 9 eyes with baseline CRT of <400µ had mean reduction of CRT of 48µ. 11 eyes with CRT ≥400µ had mean reduction of 154µ. An average of 8 injections per eye (range 5-12) in the first 12 months was required.

Conclusion: DMO can now usually be successfully treated. The outcome (mean 9 letter gain) achieved at year 1 in our patients was compatible with key clinical trials despite the presence of longstanding DMO and prior laser. DMO patients with retinal thickness excluded by NICE guidance also benefited. The quality box method of presentation of outcomes is of merit for retinal services evaluation.

140. Visual Acuity Loss in the Retrospective Natural History of the Progression of Atrophy Secondary to Stargardt Disease (ProgStar-1) Study

Rupert Wolfgang Strauss, Michel Michaelides, Sheila West, Xiangrong Kong, Beatriz Munoz, SriniVas Sadda, Hendirk PN Scholl
Wilmer Eye Institute, Johns Hopkins University, Baltimore

Introduction: The multi-centre ProgStar studies aim to characterise the natural history of Stargardt disease in order to develop new outcome measures to test safety and efficacy in anticipated trials.

Purpose: To estimate the yearly rate of visual acuity (VA) loss in participants of the ProgStar-1 study.

Method: VA data from 9 participating sites was obtained from retrospective clinical note review. VA measurements at the first visit were categorized into four groups according to WHO criteria. VA values were converted to LogMAR for statistical analysis, and linear mixed effects models were used to assess the average rate of VA loss.

Results: VA of 295 study eyes of 176 molecularly confirmed patients were evaluated. Median observation period was 3.6 years (range 1.8 to 6.0). Median visual acuity at baseline was 20/125 (range 20/500 to 20/16). Overall the rate of VA loss was -0.032 (95% CI 0.019, 0.045) lines per year. In WHO group 1, VA loss was -0.071 (95% CI 0.043,

0.099) lines per year; in group 2, the rate was -0.023 (0.008, 0.038); and in group 3 and 4 combined, the rate showed an increase of 0.022 lines 021 (-0.045, 0.002) per year.

Conclusion: VA measures showed only a small yearly decline and are not suitable as primary outcome measures in clinical trials for Stargardt disease that aim to slow disease progression.

141. Prospective on-going audit of Iluvien outcomes for diabetic macular oedema at the University Hospitals of Leicester (UHL)

Alexander James Brent, Soon Wai Ch'ng, Theodoros Empeslidis, Somnath Banerjee
Leicester Royal Infirmary

Introduction: In November 2013 NICE approved Iluvien as an option for treating chronic diabetic macular oedema, providing that the oedema is insufficiently responsive to current available therapies and the patient is pseudophakic/aphakic. Iluvien is a corticosteroid intravitreal implant which releases flucinolone acetonide for up to 3 years.

Purpose: As a one-off injection this could prove a cost effective treatment for patients with refractory diabetic macular oedema.

Method: All patients treated with Iluvien at UHL have been incorporated into an on-going prospective audit of results. This has included OCT analysis of macular oedema status as well as objective and subjective visual acuity changes. We have incorporated adverse event analysis, including intra-ocular pressure (IOP) changes.

Patients are being reviewed 1 week and 3 months post injection and then at 4 monthly intervals for the aimed duration of 3 years.

Results: To date 7 eyes of 6 patients have been injected with Iluvien. One of these patients opted to have an implant in the second eye. Subjectively all patients have noted visual improvement. Objective visual improvement has ranged from 0 – 1 snellen lines. OCT analysis has shown a mean improvement in central retinal thickness of 49.5 microns and a reduction in cystic spaces. To date there have been no reported patient side effects and no significant IOP rises.

Conclusion: All patients to date have noticed a subjective visual improvement without suffering any adverse effects. Objective analysis has shown more modest improvements.

142. Orthoptist-delivered Intravitreal anti-VEGF Injections

Lorraine North, Manju Chandran, Geeta Menon
Frimley Park Hospital

Introduction: Traditional Orthoptic work has changed considerably in recent years with the introduction of extended roles in Ophthalmology. There is increasing awareness of the positive impact of extended roles both for health professionals and for patients.

One of the major developments within the medical retinal service over the last few years has been the introduction of intravitreal injection of Anti-VEGF's (Lucentis) for patients with AMD and other macular disease. As a consequence of this development, outpatient attendances within the MR Service have significantly risen. This is due to the rapid expansion of this new treatment and the associated increase in regular follow-up care required by patients. Patients are seen at the eye clinics every 4 weeks causing tremendous burden on the service and medical staff. The use of nurse-delivered intravitreal injections has already proven highly successful in this area.

Purpose: To explore the utilisation of Orthoptists to give intravitreal injections as a new initiative in the UK.

Method: Careful planning, Policy and procedures, Indemnity, wet lab training and supervised rigorous competency assessed training programme, specific operating procedures .The outcome measures were the safety profile and patient experience.

Results: No serious vision-threatening complications were recorded in a consecutive series of 250 Orthoptist-delivered intravitreal injections.

Conclusion: Orthoptist- delivered intravitreal injections appear safe and are acceptable to patients. To our knowledge this is the first unit in the UK to utilise Orthoptists in this role and other units are using the FPH model of training.

143. 35mm slides – a novel target to simulate laser treatment

Seema Arora, Polly Dickerson, James Innes, Larry Benjamin
Hull and East Yorkshire Eye Hospital

Introduction: Whilst laser treatment is ubiquitous in ophthalmology, teaching methods vary. Although good commercial models are available for nd:YAG simulation, high-fidelity computer-based laser simulators for retinal laser are no longer produced. Novel approaches are therefore required.

Purpose: The Royal College of Ophthalmology (RCOphth) demonstrated a simulated laser training course at Congress in 2014. In preparation for this course, a novel, low cost, effective simulated target for laser training was developed.

Method: 35mm photographic slides attached to light-boxes are used in situ with medical laser devices, ensuring a safety compliant environment for training. Laser is applied directly to slides, without a contact lens. Slides are printed with standard photographs for diabetic retinopathy, or illustrations of retinal tears. Angle photographs can be used to simulate selective laser trabeculoplasty. A simple "recipe book" faculty requirements and debriefing discussions has been produced. Treated slides can be projected to facilite discussion and teaching.

Results: As the slides are simple, relatively cheap and the images on them can be varied, trainees can safely learn to treat a variety of lesions. Individual slides can be graded for quality of treatment by multiple observers and treatment can be repeated by the same trainee on different occasions, enabling validity assessment (currently being undertaken by the authors).

Conclusion: 35mm slides are a cost-effective and widely available tool that has potential to democratise access to simulated laser training that meets RCOphth standards.

144. The cost effectiveness of aflibercept compared to ranibizumab and laser in the management of diabetic macular oedema (DMO)

Jennifer Priaulx, Jacqueline Napier, Victor Barzey, Eleonora Lovato
Private Company

Introduction: Aflibercept is a fusion protein used in the treatment of several retinal diseases. Aflibercept has been approved by the EMA for the treatment of adults affected by visual impairment due to DMO.

Purpose: The objective of this study was to evaluate the incremental cost utility ratio (ICUR) of aflibercept in the management of DMO compared to ranibizumab and laser in England and Wales.

Method: A 65 health-state Markov model considering visual acuity in both eyes was developed. Costs and benefits were estimated over a lifetime horizon. The population of the VIVID/VISTA trials was used. An indirect comparison of data from VIVID/VISTA and ranibizumab trials informed efficacy. Frequency of injections and monitoring were derived using product labels, literature, and a physician survey. Utilities were taken from the literature. A payer perspective was used. Costs and benefits were discounted at a rate of 3.5%.

Results: The model predicted that aflibercept reduced costs per patient per year by £1,485 when compared to ranibizumab at NHS list prices whilst generating a higher number of QALYs. The model predicted an ICUR of £12,792 for aflibercept versus laser. The results were sensitive to shorter time horizons and probabilistic analysis showed that the probability that aflibercept is cost-effective when compared to ranibizumab and laser is 0.937 and 0.837 respectively at a threshold of £30,000.

Conclusion: Aflibercept was found to be a cost-effective option when compared to ranibizumab and laser in England and Wales.

145. Visual acuity outcomes at 12 months in NHS patients treated with Ranibizumab for diabetic macular oedema (DMO)

Georgios Dimtsas, Helen Cook, Seema Arora, Kala Gopalakrishnan, Victoria Allgar, Louise Downey
Hull and East Yorkshire NHS Trust

Introduction: DMO is a leading causes of visual impairment in the working-age population in developed countries. Intra-vitreal Ranibizumab is now recognized as a first-line therapy for visual impairment due to DMO. This retrospective study aims to document visual acuity and central macular thickness (CMT) outcomes after 12 months of Ranibizumab therapy for this disease in a large NHS service

Purpose: To compare the visual acuity and CMT outcomes of our initial NHS patient cohort who had completed a year of follow-up to those of patients in published randomised controlled trials

148. Does delay in hospital eye service (HES) outpatient appointments impact visual acuity (VA) in proliferative diabetic retinopathy (PDR) patients referred from the Diabetic Eye Screening Programme (DESP)?

Guy Negretti, Catherine Egan, Dawn Sim
Moorfields Eye Hospital

Introduction: A National DESP quality assurance standard is that 60% of R3 grade (PDR) patients referred from the DESP should receive a HES consultation within 2 weeks and 80% should receive a consultation within 4 weeks. These targets can be difficult to achieve.

Purpose: To ascertain whether a delay in hospital consultation actually leads to poorer vision in patients referred urgently with a R3 grade from screening.

Method: All patients in this single center retrospective cohort study were referred to Moorfields Eye Hospital between April and December 2013. They had a screening programme diagnosis of R3 in at least one eye.

Hospital notes were used to ascertain reasons for losses of vision and whether delay in the referral process contributed to these.

Results: Patients: 51 male and 30 female. Average age: 55 years. Average HbA1c at first appointment: 10.6%.

All patients referred as R3: 76 eyes (47%) had the same grading at their first HES appointment as at screening. Delay in consultation did not significantly affect VA (2 sample t test, p=0.79).

Patients with active PDR: 56 eyes of 38 patients had active new vessels requiring PRP. In this group delay in consultation did not significantly affect VA (2 sample t test, p=0.61). In 3 cases a delay in consultation may have led to VA loss: 2 patients had developed vitreous haemorrhages and one rubeotic glaucoma.

Conclusion: Delay in referral of R3 patients from DESP may not affect VA.

149. Safety outcomes in the UK for 5075 patients with neovascular age-related macular degeneration (nAMD) treated with ranibizumab for one year: LUMINOUS UK second interim analysis results

Geeta Menon, Christopher Brand, Shahrnaz Izadi, Sue Lacey
49 UK sites. Ms Menon's site is Frimley Park Hospital

Introduction: The LUMINOUS prospective program is a 5year, multicenter, global, observational study initiated to describe the long-term safety, effectiveness, and treatment patterns with ranibizumab 0.5mg, across all treatment indications in a broad patient population in routine clinical practice.

Purpose: The second interim analysis was undertaken in March 2014 and describes safety and efficacy outcomes for 5075 UK patients with nAMD who completed 1 year of follow-up. Here we discuss the safety outcomes only.

Method: Out of a total of 9125 global patients with nAMD and 1 year follow up, 5075 (55%) were from the UK. Patients are described according to whether they were treatment naïve (TN) or had received prior treatment with ranibizumab (PT). The UK data are described in the context of the overall global dataset for patients with nAMD. Data are shown as mean±SD in the primary treated eye unless otherwise indicated.

Results: Mean age for TN and PT UK patients were similar (78.9±8.41vs79.9±8.18 years). Discontinuation rates were similar for TN and PT patients (8% vs 9%) and likewise for Death rates (TN 1.8% vs PT 1.4%). By 12 months, TN and PT in the UK received 4.7±2.4 and 3.4±2.81 injections respectively. Ocular AEs occurred in a similar proportion of TN and TP patients in the UK (9.8% vs 9.1%). Ocular SAEs were infrequent. There were 8 cases of endophthalmitis in the UK (TN 0.6% vs PT 0.09%), rates were comparable to those observed in the global dataset. Non-ocular SAEs occurred at similar rates in TN compared to TP patients in the UK (8.7% vs 8.0%).

Conclusion: LUMINOUS includes patients with more diverse demographics than in the pivotal trials and therefore outcomes from this study are more representative of real world experiences of patients with nAMD. No new safety signals were highlighted from this analysis.

150. Glasgow Eylea Experience- One Year Outcomes

Ore-Oluwa C Erikitola, Magdalena Edington, Sara Ramamurthi, David Gilmour, Mike Gavin, Manish Gupta
Gartnavel General Hospital

Introduction: The use of anti-VEGF agents for wet-AMD has steadily risen across Greater Glasgow and Clyde, with the first cohort of patients receiving Eylea (Aflibercept) in July 2013.

Purpose: Data was gathered on patients receiving Eylea at Gartnavel General Hospital and Stobhill Hospital between July 2013 and September 2014, using case notes, e-Forms, and Topcon OCT images. 129 eyes of 110 patients fulfilled our inclusion criteria. We compared ETDRS score and central macular thickness (CMT) at initial presentation, four months, and one year in all patients.

Method: Data was gathered on patients receiving Eylea at Gartnavel General Hospital and Stobhill Hospital between July 2013 and September 2014, using case notes, e-Forms, and Topcon OCT images. 129 eyes of 110 patients fulfilled our inclusion criteria. We compared ETDRS score and central macular thickness at initial presentation, four months, and one year in all patients.

Results: Data was available for 82 patients (96 eyes) at 1 year. Reasons for exclusion included poor documentation, poor quality OCT images, and treatment discontinuation. There were 43 treatment naïve patients (50 eyes) and 39 'switchers' (46 eyes), having previously received Ranibizumab. The mean change in ETDRS in the treatment naïve group was a 9.5 letter gain at 4 months and 8.3 at one year. Mean change in ETDRS in the switcher group was a 2.6 letter gain at 4 months and 3.1 at one year. Mean reduction in CMT at one year was -109.6 microns in the treatment naïve group and -93.7 microns in the switcher group.

Conclusion: Eylea is effective in the treatment of wet AMD both in treatment naïve and 'switcher' groups.'Switchers' are a heterogenous group, with poor response to previous frequent Ranibizumab injection and longer duration of disease. As Glasgow's experience with Eylea increases, continuous auditing will be required to monitor patients' progress.

151. Cataract Surgery in Patients with Active Choroidal Neovascularisation - Examination of Current Practice Amongst UK Ophthalmic Surgeons

Huzaifa Malick, Nizar Din, Rehan Rajput, Bushra Mushtaq
Sandwell General Hospital, West Bromwich

Introduction: The number of patients being treated for choroidal neovascularisation (CNV) is increasing. Cataract surgery in these patients presents a specific challenge for ophthalmic surgeons, with no particular guidance in the timing of surgery and postoperative management.

Purpose: To examine the current practice of UK ophthalmic surgeons by means of an anonymised national confidential survey completed electronically.

Method: Ophthalmic surgeons were contacted to complete an online questionnaire. Surgeons were asked whether they would consider cataract surgery in patients being treated with Ranabizumab injections and, if so, the time interval between injections and the date of surgery. The post-operative follow-up management and reasons for surgeons choosing their particular management pathway were also investigated.

Results: 90/102 (88%) surgeons considered cataract surgery in patients currently being treated for CNV but 47/90 (52%) reported no set criteria to base their clinical decision upon. 43% of surgeons reported no set criteria for the timing of injections after surgery, with a further 23% re-injecting after a one month delay. 57% of surgeons reported 'personal experience' as their rationale. 77% of surgeons followed up these patients at one month postoperatively with a further 20% asking for a one week review.

Conclusion: The majority of surgeons surveyed reported they would consider cataract surgery in patients with active CNV. However, there was significant variation amongst surgeons in the timing of surgery and postoperative follow up in this subset of patients. This study highlights the need for further research and guidance in offering cataract surgery to patients being treated for active CNV.

152. UK national database of intravitreal dexamethasone implant (Ozurdex®) for retinal vein occlusion related macular oedema. Demographics and outcome of treatment

Ahmed Sallam, Javier Zarranz Ventura, Rob L Johnston, UK Dexamethasone Implant Study Group
Gloucestershire

Introduction: Intravitreal dexamethasone implant (Ozurdex) has been approved by UK NICE in 2011. Ozurdex for macular oedema after RVO was evaluated in the GENEVA Trial. However, clinical trials are different from real-clinical setting.

Purpose: To describe patients' demographics, existing ocular co-pathology, visual outcome and common complications for patients treated for Ozurdex treated macular oedema due to RVO in the NHS.

Method: Prospectively collected anonymized data within an electronic medical record system (Medisoft®) from 15 NHS centres across the UK were retrospectively extracted. Pre-treatment characteristics assessed included: patients' age, gender, ethnicity and co-existing ocular pathology. Data on visual outcome, IOP and cataract surgery of first Ozurdex treatment were also analysed.

Results: Only data of first Ozurdex treatment was analysed in this report that included 1444 eyes (644 with CRVO and 800 with BRVO). Mean age of patients at the time of first injection episode was 74 years and 50.3% (726) of patients were males. Pre-treatment, glaucoma/treated ocular hypertension was present in 6% of eyes.

(62.3%). Intraoperative complications were only reported in 2.1% of all administered injections, the commonest being corneal abrasion (0.3%) and ocular pain (0.3%). Proportion of eyes achieving ≥15 ETDRS letters was 38.7% after the first injection. IOP rise of ≥10 mmHg was seen in 18% (265 eyes) with 6% of eyes having IOP ≥ 3 mmHg. Rate of cataract surgery in phakic eyes was 2.25%.

Conclusion: Retinal vein occlusion patients treated with multiple DEX implant injections had improved visual acuity. Though not evaluated in the GENEVA trial, Ozurdex is used in patients with glaucoma/ocular hypertension in the clinical setting.

Knowledge of disease associated co-morbidities and rate of operative complications of treatments has implications on service planning and delivery.

153. Acute angle closure glaucoma secondary to intraocular haemorrhage in patients on warfarin use - a case series.

Alexander Chiu
Royal Glamorgan Hospital

Introduction: Angle closure glaucoma due to an anterior displacement of the iris-lens diaphragm secondary to intraocular haemorrhage is not common. Our case series here describes some key features seen in this painful and blinding condition and raises important points about the role of warfarin in accelerating the event.

Purpose: There is no consensus on treatment for this difficult condition. We wish to highlight the salient clinical findings here that may guide clinicians in the future especially when it comes to making decisions about acute management.

Method: This is a retrospective case series looking at three different cases of patients who all presented with a unilateral acute angle closure attack.

We share some ultrasound and CT imaging pictures which illustrate the disease process. We also summarise previously reported cases in literature.

Results: In all our cases, medical treatment was unfruitful. B scan and CT imaging showed a globe filled with blood. The initial etiology was presumed to be a disciform bleed from macular degeneration. INR was as high as 6.7 and 4.6 in two of our patients. Final visual outcome was PL or worse.

Conclusion: Our case series describes the features of angle closure glaucoma due to an anterior displacement of the iris-lens diaphragm secondary to intraocular haemorrhage in patients on warfarin. Visual outcome is very poor and treatment options are limited although early surgery may be an option. Identifying uncontrolled INR early is crucial and any delay may worsen the prognosis as seen in our patients.

154. The UK DR EMR Users group:multicentre study of ranibizumab Injections: report 1: visual acuity

Catherine Egan, Clare Bailey, David Crabb, Haogang Zhu, Adnan Tufail, Aaron Lee
Moorfields Eye Hospital

Introduction: Ranibizumab is a NICE approved therapy for DMO. How outcomes in clinical practice compare to clinical trials is as yet unknown for the commonest cause of visual loss in the working age population.

Purpose: To study the real-world ranibizumab therapy for treatment of DR (DMO) and to benchmark standards of care.

Method: Median ([inter-quartile range]) 1 ([0.2, 2.3]) years of routinely collected, anonymised data were extracted remotely from 17 United Kingdom centres to a central database using an electronic medical record (EMR) system. Participating centres used ranibizumab to treat DMO, eyes included used ranibizumab as the only anti-VEGF. The minimum dataset defined before first patient data entry and mandated by the EMR system included age, type of diabetes, grade of DR, visual acuity (VA) at all visits, and injection episodes.Main Outcomes Measures: Baseline VA, change in VA, number of treatments, and clinic visits, and baseline characteristics affecting VA change.

Results: Information from more than 15401 clinic visits (32691 data points) were collated.
Mean age at first treatment was 65 (std: 13) years with females:male ratio of 1.5
Mean VA for eyes followed for at least one year from a baseline of 0.53 (std: 0.32) was 0.52 (std: 0.32), 0.54 (std: 0.33) at 2 years.

Conclusion: Real world visual outcomes achieved at a large number of centres across the United Kingdom after NICE approval of ranibizumab in patients with DMO show stable visual acuity.

155. The use and effect of anti-VEGF therapies used in clinical practice for DMO in the UK

Miranda Buckle, Irene Stratton, Martin McKibbin, Cynthia Santiago, Elizabeth Wilkinson, Peter Scanlon
Gloucestershire Eye Unit

Introduction: This study aimed to understand current patterns of anti-vascular endothelial growth factor (VEGF) therapy for diabetic macular oedema (DMO) in the National Health Service (NHS).

Purpose: What is the pattern and effect of anti-VEGF treatments for DMO in clinical practice since NHS availability in April 2013?

Method: Data were prospectively collected using an electronic medical record for all patients treated in one or both eyes with first intravitreal injection (IVI) of bevacizumab or ranibizumab between 1st June 2013 and 31st May 2014 from 15 UK centres.

Results: Data were prospectively collected using an electronic medical record for all patients treated in one or both eyes with first intravitreal injection (IVI) of bevacizumab or ranibizumab between 1st June 2013 and 31st May 2014 from 15 UK centres.

Conclusion: This study demonstrates the current pattern of NHS anti-VEGF treatment for DMO. The significant differences demonstrated between patient groups selected for bevacizumab or ranibizumab treatment may add to the debate between ophthalmologists and commissioners as to the optimal choice of anti-VEGF therapy.

156. The UK DR EMR Users group: multicentre study of ranibizumab injections: Report 2: Impact of cataract surgery

Alastair Denniston, Haogang Zhu, Aaron Lee, David Crabb, Catherine Egan, Robert Johnston, On behalf of the UKDR EMR Users Group
Moorfields Eye Hospital

Introduction: Cataract surgery is associated with increased inflammatory mediators, and other retinovascular changes that might increase risk of developing diabetic macular oedema (DMO).

Purpose: To assess the rate of developing diabetic macular oedema (DMO) requiring treatment with intravitreal ranibizumab and the possible impact of cataract surgery, in the United Kingdom National Health Service.

Method: Multicentre national DR database study with 2694 eyes of 2109 patients receiving ranibizumab for DMO. Data collected in the course of routine clinical care , anonymised data within an electronic medical record system were extracted remotely from 17 Centres. The minimum dataset included: age, visual acuity at baseline and at all subsequent visits, injection episodes, and timing of cataract surgery.

Main Outcome Measures: Rate of developing 'injection-requiring DMO' in relation to timing of cataract surgery in the same eye.

Results: The follow-up period was median [IQR] 1 [0.2,2.3] years. During this period, 453/2694 eyes underwent cataract surgery. The rate of developing 'injection-requiring DMO' increased after surgery, being more than twice as high in the 3 months immediately after cataract surgery then in the 3 months prior to surgery, and did not return to the pre-cataract surgery rate until around two years after surgery.

Conclusion: This real world dataset achieved at a large number of centres across the United Kingdom suggests that there is an increased rate of developing DMO requiring treatment with intravitreal ranibizumab. In the UK access to ranibizumab for DMO is based on a minimum OCT-measured central macular thickness, therefore this finding is likely to represent a real effect on DMO, rather than being due to improved visualisation alone.

157. SOE PRIZE WINNER

UK AMD EMR USERS GROUP REPORT V: Benefits of initiating Ranibizumab Therapy for Neovascular AMD in Eyes with Vision Better than 6/12

Cecelia Lee, Adnan Tufail, Usha Chakravarthy, Marie Tsaloumas, Thomas Butt, Aaron Lee, UK AMD EMR USERS GROUP
Moorfields Eye Hospital

Introduction: Currently eyes with neovascular age-related macular degeneration and visual acuity VA better than (>) 6/12 are not routinely funded for therapy with anti-VEGF, on the NHS and vision often has to worsen before treatment is funded.

Purpose: To study the effectiveness and clinical relevance of eyes treated with good (better than 6/12 or >70 ETDRS letters) VA when initiating treatment with ranibizumab for nAMD in the United Kingdom National Health Service.

Method: Multicenter national nAMD database study on patients treated 3 to 5 years prior to the analysis. Anonymised structured data were collected from 14 centers. Primary outcome was mean VA at year 1, 2, and 3. Secondary measures included the number of clinic visits and injections.

Results: The study included 12,951 treatment-naive eyes of 11,135 patients receiving 92,976 ranibizumab treatment episodes. A total of 754 patients had baseline VA better than 6/12 and at least one-year of follow up. Mean VA of first treated eyes with baseline VA > 6/12 at year 1, 2, 3 were 6/10, 6/12, 6/15, respectively and those with baseline VA 6/12 to > 6/24 were 6/15, 6/17, 6/20, respectively (p-values <0.001 for comparing differences between 6/12 and 6/12-6/24 groups). For the second eyes with baseline VA > 6/12, mean VA at year 1, 2, 3 were 6/9, 6/9, 6/10, and those with baseline VA 6/12 to > 6/24 were 6/15, 6/15, 6/27, respectively (p-values <0.001-0.005). There was no significant difference in average number of clinic visits or injections between those with VA better or worse than 6/12.

Conclusion: All eyes with baseline VA > 6/12 maintained better mean VA than the eyes with baseline VA 6/12 to > 6/24 at all time points for at least 2 years. The significantly better visual outcome in patients who were treated with good baseline VA has implications on future policy regarding the treatment criteria for nAMD patients' funding.

NEURO-OPHTHALMOLOGY

158. Validation of Ishihara's plates and Edridge green lantern against anomaloscope

Amit Kumar Chawla, Jugal Kishore
Guru Nanak Eye Centre & Maulana Azad Medical College

Introduction: Ishihara's plates are most frequently used test and Edridge Green Lantern is very commonly used vocational test, but these techniques have not been validated against anomaloscope, which is the gold standard.

Purpose: The purpose of this study was to validate Ishihara's plates and Edridge Green Lantern against anomaloscope.

Method: In a cross sectional and observational study, responses of 502 healthy male subjects, in the age range of 10-50 years were compared for type and magnitude of colour vision defects with use of three techniques.For measurement of agreement "Kappa Statistics" was used.

Results: The prevalence of colour vision defect was 5.8% on both Ishihara's plates and anomaloscope while it varied from 4.38% to 6.97% on Edridge Green Lantern, when response to different shades of red and green or different aperture sizes was studied in this technique. Ishihara's plates and anomaloscope found same response in both eyes (right eye and left eye), while Edridge Green Lantern found different results. Unlike other techniques, the anomaloscope found that 13 (2.6 %) subjects had deuteranopia, 8 (1.6%) subjects had deuteranomaly, 6 (1.2%) had protanopia and 2 (0.4%) subjects had protanomaly. The sensitivity and specificity of Ishihara test was 100% (p<.001) and measure of agreement kappa value was 1.0 (excellent agreement). The sensitivity of Edridge Green Lantern was 96.6% and specificity was 97.7% (p<.001) and measure of agreement kappa value was 0.823 (excellent agreement).

Conclusion: Ishihara's plates have more agreement with anomaloscope than Edridge Green Lantern, thus is a better test.

159. To validate and assess the performance of the Saccadic Vector Optokinect Perimetry (SVOP) in an adult population who have suffered a stroke or traumatic brain injury (TBI)

Jayesh Khistria, Graham Thompson, Arani Nitkunan
Moorfields at St George's

Introduction: The SVOP is a novel device which is able to plot formal visual fields in a population of people who find it difficult to carry out a formal assessment. There is currently a lack of clinical evidence regarding the validity of the SVOP device.

Purpose: We propose to carry out an audit which looks at a cohort of adult patients who have suffered a stroke or TBI and see if the SVOP provides accurate results when conventional fields testing is not possible.

Method: This was a prospective case series of 43 patients who underwent visual fields testing using the SVOP 14 and 40 point programmes and Goldmann perimetry. Patients were only included if they completed both assessments.

Results: The mean age was 56.4 ± 16.0 years. 28 of the 43 patients were included in the data analysis with 8 non stroke patients recruited to act as controls. The SVOP sensitivity scores were 63% and 94% for the 14 and 40 point programmes respectively with specificity values at 83% for both. Interestingly 12 patients were unable to do Goldmann perimetry. Of these 12, 8 were able to carry out the SVOP (67%).

Conclusion: The SVOP appears to be a beneficial tool for the adult population who find it difficult to do conventional Goldmann visual fields. We would recommend carrying out the 40 point programme due to it's accuracy.

160. A unique case of Internuclear Ophthalmoplegia in the setting of a Thrombosed Internal Carotid Artery aneurysm

Chan Ning Lee, Uche Nosegbe
Royal Blackburn Hospital, East Lancashire Healthcare Trust

Introduction: Internuclear ophthalmoplegia (INO) is one of the most localizing brainstem syndromes. Causes include multiple sclerosis (MS), cerebral infarcts, infections, trauma and tumors. We present a unique case of INO secondary to a thrombosed internal carotid artery aneurysm.

Purpose: A thorough literature search reveals documented cases of confirmed INO secondary to aneurysms are very rare, with only 1 case series identifying basilar artery aneurysms as a cause of INO in 3 of 410 patients. To our knowledge, this is the first reported case of INO secondary to a thrombosed ICA aneurysm.

Method: We present a case of a 66-year-old woman with acute-onset "discordant eye movements". Examination revealed a right-sided internuclear ophthalmoplegia, ptosis and relative afferent pupillary defect, and a magnetic resonance imaging (MRI) brain scan showed a 2.6cm thrombosed aneurysm of the supraclinoid region of the right internal carotid artery (ICA).

Results: She underwent immediate stenting of the aneurysm, but subsequently developed hydrocephalus requiring two external ventricular drains (EVD) and an eventual ventriculoperitoneal shunt (VPS). The patient had no family history or significant medical history of note, and only one vascular risk factor – smoking.

Conclusion: To our knowledge, this is the first reported case of INO secondary to a thrombosed ICA aneurysm and we propose that smoking is a key aetiological factor in our patient. This supports a growing body of evidence implicating smoking as an independent risk factor for intracerebral aneurysm development.

161. Severe optic neuropathy following electrical injury

Kelvin K Y Wong, Ken Lee Lai, Donald Montgomery
Glasgow Royal Infirmary

Introduction: Electrical injury can result in significant ocular morbidity. Damage can occur from direct transmission of high electrical activity and conversion to thermal energy through ocular tissues. Resultant ocular manifestations may include anisocoria, iritis, cataract, macular cysts and chorioretinal atrophy.

Purpose: We present a case of significant visual loss from optic neuropathy following electrical injury.

Method: Retrospective case report.

Results: A 24 year old female presented to the emergency department with reduced vision in the right eye and second-degree burns to her right hand. She suffered a high voltage electrocution from handling a household wall socket. There was documented ulnar nerve sensory and motor dysfunction in her right hand. Visual acuity was perception of light OD and 6/4 OS. Anisocoria and RAPD in the right eye were recorded. Ocular examination appeared normal, with healthy optic nerve, retinal and blood vessel appearances. The patient only complained of a permanent 'white light' in the right vision. A single dose of intravenous methylprednisolone was given with no benefit. OCT scan of the macula and nerve fibre layers appeared normal. MRI imaging of the brain and orbits was unremarkable. No clinical changes were documented at 6 months.

Conclusion: The optic nerve is a good conductor of electricity and can suffer thermal effects producing coagulation of cellular proteins and ischaemia, resulting in structural and functional damage. We postulate that the optic neuropathy in this patient occurred at the pre-chiasmal level secondary to thermo-electrical damage, with the apparent absence of other ocular signs.

162. Role of Imaging in Isolated Sixth Nerve Palsy in Adults

Bridget Buckley, Sunila Jain
Royal Preston Hospital

Introduction: There are no established guidelines on neuroimaging in VI nerve palsy. This is often based on a clinicians assessment after considering the patients age, risk factors and past medical history.

Purpose: To formulate guidelines on imaging in isolated VI nerve palsy.

Method: Orthoptic and outpatient notes were retrospectively reviewed. All patients with an isolated VI N palsy seen between January 2012 and July 2013 were included. The standard was set following a literature review and the following criteria were formulated: 1. All patients under the age of 50 years old should be imaged, 2. Patients over the age of 50 with vascular risk factors may be observed for three months (after alternative diagnoses and previous malignancy has been ruled out) to see if the VI nerve palsy spontaneously resolves. If there is no improvement, deterioration, or new signs or symptoms appear, imaging should be performed. 3. MRI is most preferable form of imaging.

Results: Patients were divided into two groups; >50 years old (n=45) and <50 years old (n=18). All patients in the >50 age-group were imaged appropriately. 2 patients under the age of 50 were not imaged.

Conclusion: The following recommendations were made: 1. Raise awareness of the advantage of MRI versus CT scanning, 2.Raise the awareness that all patients < 50 years of age should be scanned, 3. Create posters to display in casualty to inform clinicians of the suggested imaging pathway 4.Re-audit in one year.

163. Retinal Nerve Fibre Layer Thinning in Different Xeroderma Pigmentosum Complementation Groups

Anna Maria Gruener, Rongxuan Lim, Ana Maria Susana Morley
St Thomas' Hospital, London

Introduction: Xeroderma Pigmentosum (XP) is a rare autosomal recessive disease with cutaneous, ophthalmic and neurological manifestations. Although the aetiology for cognitive decline in XP remains unclear, it is known that complementation groups C, E and XP variants (V) are spared the neurological problems that may occur in 20-30% of patients from groups A, B, D, F and G.

Purpose: To evaluate differences in retinal nerve fibre layer (RNFL) thickness between XP complementation groups A+B+D+F+G, C+E+V and healthy controls using spectral-domain optical coherence tomography (SD-OCT).

Method: This was a cross-sectional study. A convenience sample of 27 XP patients (27 eyes) underwent full ophthalmic examination and macular RNFL evaluation using SD-OCT (Topcon 3D OCT Series, Topcon Medical Systems, Inc., Oakland, NJ, USA). The independent t-test was used to compare mean RNFL thickness by ETDRS grid in sample versus control eyes.

Results: The mean RNFL thickness of our 27 patients was reduced in all sectors of the ETDRS grid. This abnormality in RNFL thickness was most pronounced in complementation groups prone to develop neurological symptoms. For example, in the inner superior sector, the RNFL thickness for healthy controls was 302.11±15.51µm compared to 255.08±27.32µm for our 7 patients from groups A+B+D+F+G ($p<0.001$) and 290.71±13.98µm for the remaining 20 patients from groups C+E+V ($p<0.05$).

Conclusion: These results indicate that macular RNFL thickness measurements are reduced in XP patients, especially those from complementation groups A+B+D+F+G. RNFL thickness may therefore represent a useful biomarker for the early identification and monitoring of patients predisposed to neurological disease.

164. High Resolution Imaging of the Optic Nerve and Retina in Optic Nerve Hypoplasia

Anastasia Pilat, Daniel Sibley, Rebecca J. R. J McLean, Frank A. Proudlock, Irene Gottlob
University of Leicester

Introduction: Optic nerve hypoplasia (ONH) is a non-progressive congenital abnormality of the optic nerve (ON) with limited data regarding ON and macula structure.

Purpose: To investigate the optic nerve and macular morphology in patients with optic nerve hypoplasia (ONH) using spectral-domain optical coherence tomography (SD-OCT).

Method: SD OCT (Copernicus, 3µm resolution) and hand held SD-OCT (Bioptigen Inc., 2.6 µm resolution) devices were used to acquire horizontal scans in 10 female and 6 male patients with ONH (mean age 17.2±16.22, 6-bilateral involvement) and 16 gender, age and ethnicity-matched healthy controls.

Results: Patients with ONH had smaller discs as compared to unaffected eye and healthy controls ($p<0.03$ for both), horizontal cup diameter ($p<0.02$ for both), and cup depth ($p<0.02$ for both). In the macula significantly thinner retinal nerve fibre layer (RNFL, nasally), ganglion cell layer (GCL, nasally and temporally), inner plexiform (IPL, nasally) and outer nuclear layers (ONL, nasally), inner segment (IS, centrally and temporally) were found in patients with ONH as compared to the control group ($p<0.05$ for all comparisons). Continuation of significantly thicker GCL, IPL and OPL in the central retinal area (i.e. foveal hypoplasia) was found in more than 80% of patients with ONH. Clinically unaffected eyes of ONH patients showed features of underdevelopment.

Actelion Pharmaceuticals Ltd is the UK & Eire arm of an independent global biopharmaceutical company with headquarters in Basel, Switzerland, focusing on the discovery and development of innovative treatments to particularly serve high unmet medical needs in Ultra-Orphan diseases.

Come and speak to us here on Stand 20 where we have an eye movement disorder recognition system for use in rare disease

For more information please visit www.npc-info.com and www.actelion.com

Introducing our Glaucoma Laser options

810nm Diode and 532nm SLT – treat inflow and outflow

A.R.C. LASER
enlighten your surgery.

FOX

DIODE LASER
OPHTHALMOLOGY

- 810 nm, 8 Watt Output Power
- Transcleral Cyclodiode laser treatments with affordable single use probes
- Small, portable battery-operated laser – no need for mains power!
- DCR with 810nm – Using the fox laser simplifies this procedure enormously – ask us!
- Green Aiming Beam
- LIO for ROP & Diopexy probes available

LASER...INNOVATION
MADE IN GERMANY

SLT

Selecta SLT Duet & Trio

All-in-one laser system –

3 lasers, 1 platform, maximum flexibility. The first and only Nd:YAG, Photocoagulator and SLT combination laser.

- 1064 nm Nd:YAG – The essential photodisruptor for point-and-shoot capsulotomy and iridotomy
- 532 nm Photocoagulator – Proven diode-pumped solid-state (DPSS) technology for the treatment of retinal conditions
- Q-Switched frequency-doubled 532 nm laser – For Selective Laser Trabeculoplasty, the choice of therapy for minimally-invasive treatment of primary open-angle glaucoma

Come and see us at Stand V to see our full range of ophthalmic lasers including YAG, SLT, Diode, Valon Multispot 532nm and the new CLASS CO2 laser for an alternative glaucoma surgery.

Lumenis®

Telephone: 020 8950 9501
Email: info@sigmacon.co.uk

Sigmacon
SURGICAL SYSTEMS
www.sigmacon.co.uk

Conclusion: Study provides the evidence of retinal changes in ONH. In addition to thinning of retina layers mainly involving RNFL and GCL, signs reminiscent of foveal hypoplasia were observed in patients with ONH. ON and foveal parameters measured using OCT showed high sensitivity and specificity for detecting ONH demonstrating their useful for clinical diagnosis.

165. Chikungunya-related optic neuropathy

Adriana Agiuz-Fernandez, Abhijit Mohite
Burton Hospitals NHS Foundation Trust

Introduction: The mosquito-borne alphavirus Chikungunya has seen a global re-emergence, where international travel has facilitated spread of this usually mild self-limiting viral illness.

Purpose: Optic neuropathy is a rarely described complication, and to our knowledge has not been previously reported in the UK. Treatment of Chikungunya infection is usually supportive with no evidence for the use of antivirals. We highlight the importance of urgent systemic steroids for inflammatory optic neuropathy associated with Chikungunya fever.

Method: A healthy 69-year-old female presented with painless right inferonasal visual field loss having returned from Grenada four weeks previously with joint stiffness, skin rash and fever which resolved on its own. She was admitted under Neurology for blood tests to rule out infective and autoimmune causes and an urgent outpatient MRI scan arranged. Intravenous methylprednisolone pulsing and tapered oral prednisolone was delayed for six days whilst awaiting results.

Results: Symptomatic extension of inferior field loss and progressive optic disc swelling had occurred by day two, with field loss involving fixation by day six. Initial mild improvement of acuity after pulsing was followed by sectoral optic disc pallor, relative afferent pupillary defect, persistent inferior field loss and reduced acuity at two months. Initial screening was positive for Chikungunya on PCR and serology; all other investigations being negative.

Conclusion: Sight-threatening optic neuropathy as a late complication of Chikungunya fever must be suspected in patients returning from endemic areas with blurred vision and a history of fever and mosquito-bites. Prompt steroid treatment should take precedence to avoid permanent visual loss.

166. Incidence of Idiopathic Intracranial Hypertension in Fife

Colin Goudie, Jennifer Burr, Andrew Blaikie
NHS Fife

Introduction: Idiopathic intracranial hypertension (IIH) is characterised by raised intracranial pressure in the absence of clinical, laboratory or radiological evidence of a space occupying lesion or hydrocephalus. Previous estimates of the annual incidence of IIH varies from 0.03-2.2 per 100000, however this varies depending on geographical location, age and sex. The major environmental factor implicated in IIH is body mass. 64.3% of adults in Scotland are obese or overweight. The population served by Fife Acute Hospitals is currently around 280,000. The prevalence of obesity in Fife is significantly higher than the Scottish average and is the fifth highest in all of the health boards in Scotland.

Purpose: To record the incidence of IIH in NHS Fife over a one year period.

Method: Prospective study including every patient that was seen in the ophthalmology department in NHS Fife with a new diagnosis of IIH over a one year period.

Results: There were 14 new diagnoses of IIH giving an incidence of 5 per 100 000 patients. Thirteen of these were female. The average age was 27 (range 17–50). Headache was the most common presenting symptom (eleven patients). 3 patients were noted to have swollen optic discs during a routine sight test, despite being asymptomatic. All patients were overweight and the mean BMI was 36 (range 28-49).

Conclusion: At 5 per 100 000 patients, NHS Fife has a higher incidence of IIH compared to previous estimates from other populations around the world. This is most likely due to high levels of obesity.

167. An unusual case of double vision

Martin Bennett
Bristol Eye Hospital

Introduction: Hemiretinal slip is an uncommon cause of binocular double vision seen in patients with heteronymous field loss, resulting in the loss of corresponding retinal points. This allows an underlying phoria to manifest as a tropia

Purpose: To present an interesting case of double vision presenting to the neurology clinic at the Bristol Eye Hospital.

Method: This patient had a complex neurological history dating back to 2012 when she was diagnosed with a basal skull meningioma, decompressed in 2013 via a craniotomy.

Scans in 2014 showed right sided cavernous sinus and optic nerve involvement with significant field loss and she was referred for her new symptom of diplopia.

Results: The underlying cause was later found to be due to hemi-retinal slip and she was managed initially with prisms.

Conclusion: Although a rare cause of double vision, it can be sometimes be controlled with prisms or strabismus surgery and may also spontaneously settle as the fields evolve

OCULAR MOTILITY

168. Intraoperative Botulinum Toxin in Large Angle Horizontal Strabismus

Shweta Anand, Saurabh Jain, Alistair Jones
Royal Free London Hospitals NHS Foundation Trust

Introduction: The management of large angle strabismus (> 50PD) involves surgery on three or more extraocular muscles. An alternative approach is to use intraoperative botulinum toxin (BTX) as an adjunct to the surgical recess-resect procedure.

Purpose: Our study aim was to determine the effectiveness of BTX in combination with surgical treatment compared to surgical treatment alone for the correction of large-angle horizontal deviations.

Method: We undertook a prospective, randomized case control study over a period of 18 months (August 2012 to February 2014), enrolling all patients with large angle strabismus. Paediatric patients and patients with residual or consecutive squints were excluded. Postoperative outcome was assessed at 2 weeks and 3 months and patients were monitored for immediate and late side effects of BTX.

Results: Sixteen patients were included in the study. Eight patients underwent recess-resect procedure with or without muscle transposition with 2.5 units of BTX injection into the recessed muscle and 8 patients underwent surgery without BTX injection.

In the BTX group, the Mean angle of deviation decreased from the preoperative value of 53.75 PD to 16.87 PD at 6 weeks and 9.62 PD at 3 months.

The Non BTX surgical group showed a decrease in the Mean angle of deviation from 50.62 PD to 9.87 PD at 6 weeks and 8.87 PD at 3 months. No side effects were noted in the BTX group.

The overall surgical success was satisfactory with all patients having deviations less than or equal to 8PD at 3 months.

Conclusion: Administration of intraoperative BTX did not improve surgical outcomes in our cohort of patients with large angle strabismus

169. Opaque Intraocular Lenses for Intractable Diplopia: A Retrospective Case Series

Jacintha Gong, Caroline MacEwen, Una O'Colmain, John Ellis
Ninewells Hospital

Introduction: Occlusive methods such as patching and occlusive contact lenses have long been used to treat intractable diplopia. Surgical options include opaque intraocular lens (IOL) implantation.

Purpose: We report our experience with opaque IOL implantation for intractable diplopia in our tertiary strabismus and vitreoretinal referral centre.

Method: We undertook a retrospective review of all cases of this procedure at our centre over 11 years.

Results: Six patients underwent routine opaque IOL surgery, having unsuccessfully tried at least one other occlusive therapeutic modality for between five to 30 months (median 11 months). At the time of opaque IOL implantation, one patient was diabetic, and another had 6/9 vision.

One patient was pseudophakic, and a Morcher 85F black PMMA IOL was inserted into the ciliary sulcus. The remaining five cases underwent phaco-emulsification surgery, with insertion of a custom-made Ophtec black polycarbonate Ani II IOL into the capsular bag.

All six patients reported relief of diplopia post procedure. One patient subsequently required explantation of the opaque IOL due to symptomatic loss of visual field; two patients developed secondary strabismus, requesting surgical correction.

Conclusion: Our case series is unique in that we describe the first case to our knowledge in which an opaque IOL was implanted in a known diabetic. We also describe a particularly challenging case where the occlusive IOL had to be explanted.

We discuss the preoperative consultation, choice of occlusive IOL, and postoperative care. Our case series adds to the limited published data on the use of opaque intraocular lenses in treating intractable diplopia, with all of our six patients reporting relief of distressing diplopia.

170. Comparing the effect of surgery versus botulinum toxin A injection on quality of life in adults with strabismus

Rohan Hussain, Saurabh Jain
Royal Free Hospital

Introduction: Surgery and botulinum toxin A (BTXA) injection are both interventions for strabismus that have been shown to have a positive impact on patients' quality of life (QoL), as determined by the Adult Strabismus-20 (AS-20) questionnaire. Whether one treatment modality is superior to the other in improving QoL is yet to be determined.

Purpose: To compare the effect of surgery versus BTXA injection on quality of life in adults with strabismus, using AS-20 scores.

Method: Patients undergoing surgery or BTXA injection were recruited in a prospective cohort study. AS-20 questionnaires were completed pre-treatment, 2 weeks post-treatment and at 3 months. Changes in AS-20 score within each group were investigated and compared using the Wilcoxon test.

Results: For patients undergoing surgery (n=16), there was an improvement in median AS-20 score from pre-treatment to 2 weeks post-treatment (59.4 vs 74.4; $p<0.05$). There was no further improvement in AS-20 score at the 3-month mark (74.4 vs 85; p=0.3).

For patients receiving BTXA injection (n=6), there was no improvement in median AS-20 score from the pre-treatment score at either 2 weeks (61.9 vs 67.5; p=0.7) or 3 months post-treatment (61.9 vs 63.4; p=0.1).

Conclusion: In our cohort, surgery seemed to be a more effective treatment for strabismus with a longer duration of effect. Conversely, patients undergoing toxin treatment did not appear to have a significant or long lasting effect on their QoL, even within the duration of action of the drug.

OPTICS & REFRACTION

171. Eye and hand fatigue in minimal invasive surgery; 2D vs. 3D: Randomised control trial

Adham Youssef, Walid Elbakbak, Amina Bouhelal, Bijen Patel
Barts Cancer Institute

Introduction: The available data reports the efficacy of the three-dimensional (3D) vision system and its superiority over two-dimensional (2D). However the physiological effects of 3D on surgeons remain unaddressed.

Purpose: To address such gap in literature; we aimed to objectively investigate the effects of 3D on ocular and hand muscles fatigue in comparison to 2D and its impact on surgical performance in novices.

Method: We conducted a stratified randomised comparative study with cross-over of 26 novices. Eye fatigue was assessed using Visual Stress Test (VST), Visual Acuity (VA) and post-study display questionnaire. Hand fatigue was assessed using grip dynamometer. Surgical performance was evaluated using a validated curriculum with proficiency criteria Fundamentals of Laparoscopic Surgery curriculum (FLS).

Results: The VST showed a higher mean score in the 3D group of 3.92 in comparison to the 2D group with mean of 3.15, (P-value = 0.23). It is apparent from VA test that the 3D group had a better VA on both eyes compared to the 2D group after performing the suturing task (right eye; P-value=0.29, left eye P-value=0.47). There was no statistical difference in handgrip strength between both display groups (right hand; P-value=0.55, left hand P- value=0.70). The 3D group demonstrated statistically evident superior performance in terms of less slippage errors (P-value=0.003) and gap errors (P-value=0.015), number of repetitions and accuracy were similar in both groups (P-value = 0.81 and P-value = 0.20 respectively).

Conclusion: 3D offers superior visual feedback that positively reflects on the VA and accuracy, which in turn favorably impact training and patient safety.

ORBIT & OCULOPLASTICS

172. Orbital ORF: a case review

Shokufeh Tavassoli, Glynn Baker
Cheltenham General Hospital

Introduction: A 46-year old gentleman presented following an accident where he had been struck below the right eye by the head of a sheep. One week after which he developed a non-painful erythematous swelling in the infero-temporal margin of the right orbital rim, with a central area of crusting. The lesion continued to increase in size (3-4cm) and did not improve on two courses of oral antibiotics (flucloxacillin for one week, followed by co-fluampicil for a further week).

Purpose: To discuss a case of periocular orf infection.

Method: A punch biopsy was performed, which revealed an inflammatory papular lesion, positive for Parapox DNA consistent with an orf viral infection. On review one-week following the biopsy, the lesion had significantly reduced in volume, and there was full resolution a month later.

Results: Human orf, known as ecthyma contagiosum, is caused by a parapoxvirus species picked up from sheep or goats. Ninety-five percent of lesions are on the hand, with only one case documented previously describing ocular involvement. The initial incubation period is three to seven days, after which a firm reddish blue papule forms on the skin surface, which enlarges to form a hemorrhagic pustule or bulla, typically measuring 2 to 3 cm in diameter. The lesions typically resolve spontaneously within four to six weeks. In non-ocular cases, liquid nitrogen cryosurgery may speed resolution, and razor blade shave excision is effective if lesions persist.

Conclusion: Our case highlights a rare cause of a substantial self-limiting periocular lesion caused by infection with orf.

173. Pre-moulded custom implants for spheno-orbital reconstruction

Sam Evans, Daniel Morris, Carol Lane, Satyajeet Bhatia, Caroline Hayhurst
UHW, Cardiff

Introduction: Spheno-orbital hyperostotic tumors require extensive bony resection. We report the use of pre-moulded custom orbital and cranial implants after combined orbital and skull base tumour resection.

Purpose: To review the results of a novel approach to the repair of cranial and orbital surgical defects

Method: A series of six patients who underwent resection of spheno-orbital tumours (5 meningioma, 1 fibrous dysplasia) between May 2012 and July 2014. All patients underwent helical 3D CT planning imaging and the resection was defined on a 3D model to remove all involved bone including the orbital rim where necessary. The implant material is dependent on the anticipated need for adjuvant radiotherapy – either Poly-ether-ether-ketone (PEEK) or titanium.

Results: All patients presented with visual deficit and proptosis. 5 cases were female and the median age at the time of operation was 49.5. Current median follow-up is 8 months (2 - 24 months). 2 patients had previous resections of meningioma, re-presenting either with recurrence (1) or failure of the previous prothesis (1).
Two patients had ongoing minor visual symptoms. All others have no ongoing visual symptoms and all patients have normal optic nerve function.
A gross total resection was achieved in all cases. 3 patients had PEEK implants and 3 titanium. There were no intraoperative problems with implant placement. Overall cosmetic outcome was good and there were no cases of visual deficit post-operatively. There were no infections or CSF leak.

Conclusion: Radical resection of spheno-orbital hyperostotic tumors can be achieved with good cosmetic outcome and minimal morbidity, using custom pre-moulded rigid implants for reconstruction. This approach has demonstrated excellent functional, oncological and cosmetic outcomes. An advantage of PEEK implantsis reduced artefact on subsequent imaging and reduced radiotherapy beam scatter where adjuvant treatment is needed.

174. Predictive Parameters of Response to Intravenous Methylprednisolone Immunosuppression in the Management of Active Thyroid Eye Disease

Maria Amesty, Ruth Chen, Lorraine Abercrombie, Katya Tambe
Nottingham University Hospitals

Introduction: Thyroid eye disease (TED) is an autoimmune condition affecting 50–90% of patients with Graves disease. Most of these patients have mild ocular manifestations requiring simple treatment measures, but 3-5% develop more severe TED requiring more aggressive treatment.

Purpose: To investigate the efficacy of intravenous methylprednisolone (IVMP) immunosuppression in the management of active thyroid eye disease.

Method: This is a retrospective study of 19 patients with active TED treated with IVMP between January 2012 and October 2014. The IVMP was administered daily, 500 mg for three consecutive days following Freeman protocol. Corrected visual acuity, colour vision, visual field and extraocular movements were analysed. Activity of GO was graded using a clinical activity score (CAS). Clinical characteristics including age, gender, acute or chronic onset, the presence of dysthyroid optic neuropathy (DON), diabetes and smoking history were also analysed.

Results: There were 16 hyperthyroid, 2 hypothyroid and 1 euthyroid. 5 patients presented DON, 32% had severe active and 63% had moderately active TED. All patients received three courses of IVMP. At two weeks, visual acuity, colour vision, CAS score, visual field and extraocular movements improved significantly in all eyes except two. 8 patient required nonsteroidal immunosuppression with Azathioprine after IVMP.

Conclusion: IVMP +/- Azathioprine immunosuppression were effective in permanently reducing activity and restoring visual function in all the eyes treated except one. The presence of DON at diagnosis and persistent active disease after two weeks, were good predictors of unresponsiveness to steroids. On the contrary, some good predictive parameters were the female gender, the young age at presentation, chronic progression at onset and no smoking history. We encountered no severe side effects of pulsed IVMP and 1.5 g over 3 days could be considered a safe dose.

175. A comparison of long-term outcomes between external and endoscopic dacryocystorhinostomy

Paul McCann, Mark Halliwell, Indira Madgula
Warrington and Halton NHS Foundation Trust

Introduction: Dacryocystorhinostomy (DCR) bypasses the nasolacrimal duct obstruction allowing drainage between the lacrimal sac and the nasal cavity. There is a paucity of studies comparing the long-term outcomes of external versus endonasal DCR.

Purpose: To evaluate the long-term functional outcomes of external versus endoscopic DCR using patient reported outcome measures (PROMs)

Method: 82 patients (52 F, 30 M) who underwent DCR in a district general hospital in North West England from August 2003 to August 2007 were included in the study. A questionnaire was sent to all patients who participated in an initial 30 month follow-up study. The questionnaire comprised of two questions and a visual analogue scale (VAS) evaluating patient reported post-operative symptomatology and success of surgery. A reminder was sent after 4 weeks to those who did not respond.

Results: 47 patients (57.3%) returned the questionnaire (25 endoscopic DCR, 22 external DCR). At 60 months follow-up, mean VAS score was 9.5 (vs 8.7 at 30 months) in the external DCR group and 7.45 (vs 7.7 at 30 months) in the endoscopic DCR group. At 60 months, 90% (vs 94% at 30 months) of external DCR and 68% (vs 86% at 30 months) of endoscopic DCR patients were asymptomatic or improved. At 60 months, 90% (vs 95% at 30 months) external DCR group and 72% (vs 83% at 30 months) endoscopic DCR patients considered the surgery partially or completely successful.

Conclusion: External DCR offers better patient reported outcomes than endoscopic DCR at 5 years.

176. Dynamic Digital Subtraction Dacryocystography for Paediatric Epiphora

Ruth Chen, Maria Amesty, Julia Baxter, Shery Thomas, Timothy Taylor, Lorraine Abercrombie, Katya Tambe
Nottingham University Hospitals

Purpose: To study the utility of dynamic digital subtraction dacryocystography technique (DSDCG) in paediatric epiphora.

Method: Retrospective study of 26 eyes of 20 children.The presenting symptom was persistent epiphora despite previous syringing and probing, presence of fistulae, dacryocystitis or older children presenting for the first time to the clinic with epiphora. DSDCG was performed in all cases, using a 27G Rabinov catheter and N300 contrast medium. After probing (Ritleng probe, FCI Ophthalmics Inc., Issy-les-MoulineauxCedex®,France), intubation was carried out using a self-retaining monocanalicular Monoka silicone stent via the upper punctum (FCI, Issy-les-Moulineaux Cedex®,France). In a few cases external dacryocystorhinostomy was required.

Results: In 24 eyes (92,3%) the obstruction was within the nasolacrimal duct, and in 2 eyes (7,7%) the obstruction was within the canaliculus.These two patients underwent canalicular trephination followed by intubation resulting in patency of the NLD and alleviation of the epiphora. Of the remaining 24 cases, the obstruction was found to be in the distal end of the NLD in 19 eyes (79.2%) permitting probing and sllicone stent intubation. The remaining 5 eyes (20,8%) required dacryocystorhinostomy to resolve the epiphora as they were found to have a proximal block in the NLD at its junction with the lacrimal sac. 1 eye presented with a lacrimal sac fistula, that was successfully identified and excised.

Conclusion: Intraoperative DSDCG is useful not only to identify the exact location of the obstruction in cases of failed probing or delayed referral for paediatric epiphora, but also in directing the surgical management. Patients with proximal NLDO required a DCR and those with a distal obstruction were successfully managed with probing followed by NLD intubation with a self retaining monocanalicular Monoka stent. DSDCG was also extremely useful in confirming total excision and closure of the fistula tract, by absence of regurgitation of dye at the end of the procedure.

177. Impact of prognostic indicators on final visual outcome following penetrating ocular trauma: a review of 40 cases

Alexander Dryden, Tahir Farooq, Murray Aidan
Birmingham Midlands Eye Centre

Introduction: Penetrating traumatic eye injuries are a leading cause of monocular visual impairment. Ocular trauma scores based on prognostic indicators are currently used to predict prognosis. Final visual outcomes are difficult to predict due to numerous variables involved in these complex injuries.

Purpose: To describe the visual outcomes of patients presenting with penetrating ocular injuries to a tertiary referral eye centre.

Method: A retrospective, non-interventional analysis was conducted for all cases presenting with penetrating ocular trauma from March 23, 2013 to September 20, 2014. Outcome was assessed by pre and post-operative visual acuity (VA).

Results: Medical records of 57 patients (49 male) were reviewed. 40 patients had adequate follow up to determine final VA. Injuries were classified according to both anatomical location (corneal (29), corneoscleral (4), scleral (7)) and severity of injury (ruptured (9) and lacerations (31)). Mean age of male and female patients was 36 and 51 years of age respectively. 21 patients (52.5%) required surgical repair. In total, only 22% of those with globe rupture had a postoperative visual acuity of greater than 6/9 compared to 64.5% of those with lacerating injuries.

Conclusion: Prognosis for globe rupture is significantly worse than for lacerating injuries. It is therefore important to determine this on presentation. Our observations show no correlation to adverse outcome for cases undergoing surgical intervention within 48 hours of presentation. Poor prognostic indicators are a better predictor for final VA than time to surgery.

OTHER

178. Fungal endophthalmitis as a complication of endoluminal vacuum therapy in general surgery

Megan Wood, David Wright
Southern General Hospital, Glasgow

Introduction: This is the first case were endogenous fungal endophthalmitis has resulted from the use of endoluminal vacuum therapy in colorectal surgery.

Purpose: This is the first case were endogenous fungal endophthalmitis has resulted from the use of endoluminal vacuum therapy in colorectal surgery.

Method: The patient developed a pre-sacral collection after an anastomotic leak, a complication of colorectal surgery to form an ileo-anal pouch. The collection was treated with endoluminal vacuum therapy, an emerging treatment where a sponge with mild negative pressure is placed within a cavity to encourage drainage and granulation. This treatment is a novel and increasing popular method of treating anastomotic leak in gastrointestinal surgery in the UK. Despite the therapy the patient suffered recurrent sepsis treated with intravenous antibiotics and eventually developed blurred vision and red eyes.

Results: Examination revealed preretinal lesions typical of fungal endophthalmitis leading to extended fungal cultures of the sponges revealing several Candida species. The patient was treated with oral voriconazole and the endoluminal vacuum therapy was discontinued, eventually resulting in full recovery of vision.

Conclusion: This case highlights an important ophthalmological complication of an emerging treatment in colorectal surgery. Both general surgeons and ophthalmologists need to be aware of the possible complication of endophthalmitis with endoluminal vacuum therapy.

179. A Comparison of Research Productivity in Ophthalmic Subspecialities

Jeffry Hogg, Arthur Okonkwo, Chiedu Ufordiama, Rishi Dhand, James Muggleton, Francisco Figueiredo
Newcastle University and Newcastle upon Tyne Hospitals

Introduction: The proportion of conference abstracts that are published is a marker of research quality that has not previously been used to analyse Ophthalmology subspecialties.

Purpose: Compare publication trends in Ophthalmology subspecialties.

Method: 1,862 abstracts presented at The Royal College of Ophthalmologists' Annual Congress between 2005-2012 were examined using PubMed. Publication, time to publication and impact factor was recorded. GRAPHPAD PRISM was used for analysis.

Results: Rapid Fire abstracts were published the most, 54.56%, with the highest impact, 3.25±0.25. The most published subspecialty was Vitreoretinal, 36.78%; the least was Medical Retina and Uveitis, 20.53%. Neuroophthalmology published to the highest impact, 2.91±0.62; Vitreoretinal published to the lowest, 1.66±0.22. Paediatrics impact declined over 8 years -0.22±0.09 ($p<0.05$). There was no significant difference in publication rate or impact between subspecialities.

Neuroophthalmology took the longest to publish, 24.53±8.38 months ($p<0.05$) and Paediatrics took the shortest, 11.88±1.94 months ($p<0.05$). Reductions in time to publish were seen in; Vitreoretinal, -3.50±1.58 months ($p<0.05$); Orbit, -2.75±1.29 months ($p<0.05$); and Cataract -2.67±0.87 months ($p<0.01$).

The proportion of Vitreoretinal abstracts presented increased by 10.37±1.48 percentage points ($p<0.001$). Vitreoretinal and Neurophthalmology make up a small proportion of abstracts, 3.71% and 2.69% ($p<0.05$).

Conclusion: The Congress peer-review process accurately identifies abstracts for Rapid Fire presentation.

Despite the diversity of Ophthalmic subspecialities research output has no significant difference. Vitreoretinal research is growing and the impact of Paediatrics output has seen a decline.

Trainees should be encouraged to use protected time to contribute to research output in their subspecialities of interest.

180. An 8 Year Analysis of UK Ophthalmic Publication Rates

Arthur Okonkwo, Jeffry Hogg, Chiedu Ufordiama, Rishi Dhand, James Muggleton, Francisco Figueiredo
Newcastle University and Newcastle upon Tyne Hospitals

Introduction: A Cochrane review showed 44.5% of abstracts presented at biomedical meetings were published in peer-review journals. Longitudinal analysis of British Ophthalmic research has yet to be described.

Purpose: To establish if the reconstruction of clinic academic training, through the 2005 Walport Reforms, has improved abstract publication in Ophthalmology.

Method: 1,862 abstracts presented at The Royal College of Ophthalmologists' Annual Congress between 2005-2012 were examined using PubMed. Publication, time to publication and impact factor was recorded. GRAPHPAD PRISM was used for analysis.

Results: 26.84% of abstracts were published to an impact of 2.39±0.077; no trends were seen in publication rates or impact 2005-2012. Time to publication was 14.45±1.39 months; this reduced by 1.31±0.29 months ($p<0.0001$) over the study period. There was correlation between time lag and impact factor, $r=-0.1482$ ($p<0.001$).

Basic science abstracts were more published, 55.61±0.053% vs. 25.48±0.013% ($p<0.01$), and to a higher impact, 3.49±0.44 vs. 2.29±0.081 ($p<0.001$), than other abstracts.

Randomised controlled trials (RCT) were more published; 50±0.084% vs. 26.36±0.011% ($p<0.05$), and to a higher impact, 4.30±0.88 vs. 2.31±0.078 ($p<0.05$), than other abstracts.

Conclusion: The proportion Ophthalmology abstracts published after presentation is less than biomedical meetings. Despite time to publish abstracts reducing and a negative correlation.

181. Phacoemulsification training in an independent sector treatment centre (ISTC) - the Severn Deanery experience

Tomas Burke, Katherine McVeigh, Teresa Anthony
Royal United Hospital Bath

Introduction: Concerns have been raised about the impact of ISTCs on training, particularly for surgical trainees. Emersons Green NHS treatment centre (an ISTC) has been taking ophthalmic surgical trainees, on rotation at Royal United Hospital Bath NHS trust, for phacoemulsification training since 2011.

Purpose: To compare training opportunities and experiences of trainees carrying out phacoemulsification surgery, concurrently, in an ISTC and NHS trust.

Method: We compared the number of cases each trainee performed while attending both units and sought to determine their impression of training in the ISTC compared with the NHS trust. SurveyMonkey© was used to record trainee experiences. Of the 6 trainees who had attended both units, three responded to our survey. For all non-responders the audit tool in Medisoft© was used to determine phacoemulsification surgery numbers.

Results: Trainees attended both units for between 6-18 months. The mean number of cases carried out per trainee per month at the ISTC was 8.1 (range: 5.8-11.3). The mean at the NHS trust was 4.2 (range: 1.8-11.0). For each case completed at the NHS trust the trainees completed, on average, 2.7 cases at the ISTC. Respondents rated the training there as either “good” or “very good”. All respondents had exposure to the “chopping” technique at the ISTC and felt that training there was “better” than that at the NHS trust.

Conclusion: Training in the independent sector is feasible and demonstrated a positive impact upon training opportunities and surgical numbers.

182. Survey of current undergraduate ophthalmology teaching across the UK

Farihah Tariq, Mohamed Loutfi, Mark Watts
Raigmore Hospital, Inverness

Introduction: At present, there is no formal undergraduate curriculum for ophthalmology prescribed by the General Medical Council (GMC). The British Undergraduate Ophthalmology Society (BUOS) in collaboration with the Royal College of Ophthalmologists (RCOphth) Education Committee surveyed medical students and junior doctors to evaluate current ophthalmology teaching.

Purpose: The study investigated perceptions regarding the content, delivery method, timing and effectiveness of teaching. Previous studies have not considered student perspectives.

Method: An online questionnaire targeting medical students (years 3-6) and foundation year doctors was published between April and September 2014. Invitation to complete the survey was sent out by email and social media.

Results: 1070 responses were obtained; 95 were from doctors and the remaining from students across all 32 medical schools (average response: 33 students per university).

Teaching was reported to be delivered via lectures (77%), small-group teaching (53%), problem-based learning (25%), clinical skills (68%) and a clinical attachment (73%). Clinical attachments were an average length of 5 days (range: 0 - >11 days) during which 32% of students received no formal teaching. On average 3 hours or less was dedicated to clinical skills. Overall, 49% of students felt not enough time was allotted to ophthalmology, 47% were not confident examining the eye and 48% felt they had inadequate ophthalmic knowledge.

Conclusion: There is significant variation in ophthalmology teaching across UK medical schools. The RCOphth should collaborate with the GMC to devise a specific ophthalmology curriculum for undergraduate students to ensure uniformity in baseline knowledge upon graduation.

183. De-mystifying the direct ophthalmoscope for medical students: Evaluation of a novel device for teaching and assessment

Christopher Schulz, Jonathan Moore, Deniz Hassan, Elise Tamsett, Claire Smith
Brighton and Sussex Medical School

Introduction: Students struggle to learn direct ophthalmoscopy. An innovative ‘teaching ophthalmoscope’ has been designed that resembles a conventional handheld ophthalmoscope. This device enables a third person to simultaneously observe the student’s view of the fundus on a nearby computer screen.

Purpose: To evaluate the potential use of this teaching ophthalmoscope as an aid to learning, and its reliability as a tool for objective assessment of competence.

Method: Participants were randomised (1:1) to be taught with either a conventional handheld direct ophthalmoscope (control) or the new device (intervention). Competence was assessed in two separate OSCE stations: with the conventional ophthalmoscope and with the teaching device. Students rated their confidence on a scale of 1-10. Scores of competence and confidence were compared between groups. The reliability of objective assessment was compared between stations.

Results: Fifty-five medical students participated. The intervention group scored better than controls on station 2 (19.8 vs 17.6; p=0.01) and tended to score better on station 1 (19.1 vs 18.4; p=0.52). They reported greater levels of confidence in fundoscopy (7.3 vs 4.9; p<0.001). Examiner scores showed significantly improved correlation using the teaching device in an OSCE station, compared to the conventional ophthalmoscope (r=0.90 vs 0.67; p<0.001).

Conclusion: The teaching ophthalmoscope is associated with improved student-reported confidence and objective measures of competence, when compared with a conventional direct ophthalmoscope. Used as part of an OSCE, the device offers greater reliability than the current standard.

184. Consensus on outcome measures for glaucoma effectiveness trials: results from a Delphi and Nominal Group Technique approaches

Rehab Ismail, Augusto Azuara-Blanco, Craig Ramsay
Health Services Research Unit, University of Aberdeen

Introduction: Comparing effectiveness of interventions across glaucoma trials can be problematic due to inconsistency of outcomes.

Purpose: Experts' perspectives were sought to identify a key set of outcomes and reach consensus on measuring them.

Method: A two-round Delphi survey was conducted followed by a Nominal Group Technique (NGT). Delphi round one involved items identified from a systematic review. Round two was developed based on round one data. A 10-point Likert scale was used to quantify importance of outcomes and clinical measures. Experts were identified through two glaucoma societies' membership-the UK and Eire Glaucoma Society and European Glaucoma Society. Results were analysed using descriptive statistics.

Results: A total of 65 experts completed round one; of whom 86% completed round two. Agreement on the importance of outcomes was reached on 48/51 items (94%). Intraocular pressure (IOP), visual field (VF), safety, and anatomical outcomes were classified as highly important. "Mean follow-up IOP" using Goldmann tonometry achieved the highest importance for IOP measurement, while for evaluating VFs "global index mean deviation/defect (MD)" and "rate of VF progression" were the most important. Retinal nerve fibre layer (RNFL) thickness measured by OCT was identified as highly important. NGT reached consensus on 'change of IOP (mean of three consecutive measurements taken at fixed time of day) from baseline', change of VF-MD values (three reliable VFs at baseline and follow up visit) from baseline and change of RNFL thickness (two good quality OCT images) from baseline).

Conclusion: Consensus was reached on how best to measure IOP, VF, and anatomical outcomes in glaucoma trials.

185. Curvesite: A novel scleral marker for intravitreal injections

Narendra Dhingra
Pinderfields Hospital

Introduction: Scleral markers used for intravitreal injections (IVT) typically are solid and have two calibrated ends.I have designed a new device called Curvesite that works as a marker, stabiliser and its central hollow provides local application of iodine at the site of injection.

Purpose: To report on Curvesite design and preliminary results of the initial pilot.

Method: Curvesite measures 70mm in length,8 mm in width and has a central hollow. The internal radius of curvature which aligns with the limbus is 5.25mm and the outer arc has a radius of curvature of either 7.75mm or 8.25mm depending upon which end (3.5 mm or 4 mm) is used. After ethics approval, fifty eyes of 50 patients undergoing IVT were included in this pilot. The device creates an arc concentric to the limbus and the needle can be inserted into the vitreous cavity anywhere along the arc. The device was assessed for ease of use, any ocular complications induced, delivery of iodine locally and any other unexpected problems.

Results: The injection site arc along the limbus, delineated with iodine, was visualised in all eyes. None of the eyes developed any ocular complications. However in 10 eyes an additional cotton bud applicator was needed for additional stability.

Conclusion: Curvesite is a novel device that not only helps to mark the site of injection but also delivers iodine locally to reduce the incidence of endophthalmitis. Further pilot with modification in its design are being carried out.

186. Adoption of Electronic Medical Records in Eye Units across the UK

Shin Lim, Humma Shahid
Addenbrooke's Hospital, Cambridge, United Kingdom

Introduction: Ophthalmology units across the UK vary widely in their adoption of electronic medical records (EMR). There is a lack of evidence to show the extent and progress of EMR adoption.

Purpose: This study captures a snapshot of the current landscape of EMR use, a baseline for comparison in future studies.

Method: An electronic survey questionnaire was sent to all NHS Ophthalmology Units in the United Kingdom. The survey was designed to determine the extent of EMR usage and details about current use or planned future implementation by each unit.

Results: 77.6% (n=104) of NHS Ophthalmology units responded. 45.3% (n=48) of units were currently using an EMR and a further 26.4% (n=28) plan to implement EMR within 2 years. The majority of units with a current EMR system (70.8%) utilise Medisoft®. EMR is used by all clinicians in 37.5%, and by all subspecialties offered at the unit in 27.0%. In 56.3%, new clinical notes are entered into EMR only by clinicians. All imaging devices are networked to EMR in 13.1%. In 43.8%, EMR is accessible by other specialties within the same hospital. 71.1% would recommend EMR to a colleague.

Conclusion: EMR has the potential to address current limitations of patient information transfer and sharing in ophthalmology. It is pleasing to see a significant proportion of units already engaging with EMR or having plans to do so in the near future. However, differing EMR systems and lack of remote access mean further optimization of these record systems is needed to allow data transfer between units.

186. The Arclight Ophthalmoscope: an economic alternative to the standard direct ophthalmoscope

Charles Cleland, James Lowe, Evarista Mgaya, Godfrey Furahini, Matthew Burton, Heiko Phillipi
Kilimanjaro Christian Medical Centre, Tanzania

Introduction: The Arclight ophthalmoscope is the first direct ophthalmoscope primarily aimed at the developing world. It is marketed at £5 per instrument when sold in bulk.

Purpose: To compare the Arclight ophthalmoscope with a Heine K180 direct ophthalmoscope in terms of assessing the vertical cup disc ratio (VCDR) and its ease of use (EOU) in medical students. This will provide evidence for the use of the Arclight ophthalmoscope as a reliable alternative.

Method: The students used both the Arclight and the Heine K180 ophthalmoscopes to examine the optic disc in each eye of 8 'subjects'. A consultant ophthalmologist was used as the gold standard. An EOU score was given for each instrument.

Results: A total of 288 examinations were performed. 213 (74%) resulted in an estimation of the VCDR with 123/144 (85%) using the Arclight, and 88/144 (61%) using the Heine. The mean deviation from the gold standard VCDR was similar for both instruments, with a mean± SD of -0.084±0.133 for the Arclight and -0.072±0.119 for the Heine (p=0.47). The overall EOU score was significantly higher for the Arclight compared to the Heine ophthalmoscope (p=0.003). In addition, subject reported glare and length of examination data were significantly less for the Arclight ophthalmoscope (p=0.008 for both parameters).

Conclusion: The Arclight ophthalmoscope performs as well as a standard direct ophthalmoscope in terms of VCDR estimation with a significantly better EOU score. This suggests the Arclight ophthalmoscope is a reliable, cost effective alternative to the standard direct ophthalmoscope.

188. A novel, safe and cost effective way for teaching corneal foreign body removal

Mei-Ling Cheng, Lanxing Fu, Peter Cackett
Princess Alexandra Eye Pavilion

Introduction: Corneal foreign body and rust ring removal is usually performed under slit lamp microscopy in the setting of Accident and Emergency, Acute Ophthalmology Services, General Practice or Opticians. It requires good hand-eye co-ordination, fine motor skills and dexterity. Acquisition of these skills warrant regular practice for safe application on actual patients, as mistakes can potentially result in irreversible visual loss.

Purpose: It is advantageous to train nurses and doctors to carry out corneal foreign body removal on an alternative medium, prior to performing on patients to improve patient safety.

Method: Unused, expired agar plates can be obtained from local Microbiology departments. The agar plates may be suspended from the headrest of a slit lamp to practice corneal foreign body removal. Material such as gravel may be

scattered on the surface of the agar plate, and with the assistance of a 21G or 23G hypodermic needle, one can practice the skill safely and effectively.

Results: Individual, immediate feedback and guidance can be achieved via use of a training side-arm on the slit lamp. This training method has been well received; as demonstrated from the feedback of 24 delegates, who attended a practical session on corneal foreign body removal at our annual basic Ophthalmology skills course.

Conclusion: This is a novel, safe and cost effective way for teaching corneal foreign body removal, to all medical professions required to perform this skill on patients.

189. Profile of the ocular dimensions, interocular asymmetry and their associations in an older white population: The Edinburgh Eye Study

Yan Ning Neo, Baljean Dhillon
Princess Alexandra Eye Pavilion, Edinburgh

Introduction: Interocular asymmetry of biometric dimensions such as axial length (AL), corneal curvature (Km) and anterior chamber depth (ACD) is associated with disabling eye conditions and is shown to reduce vision-related quality of life. This was the first European study to report the influence of environmental factors towards these biometric dimensions.

Purpose: To evaluate the associations of ocular dimensions and interocular asymmetry with adult stature and sociodemographic status.

Method: This was a population-based cross-sectional study of adult Caucasians with cataract aged ≥50 in Scotland (n=510). AL, Km and ACD were measured using partial coherence laser interferometry. Interocular asymmetry was the absolute difference of these dimensions between both eyes. Scottish Index of Multiple Deprivation (SIMD) was used to examine the sociodemographic distribution of the sampling population. Multivariate regression models were constructed to examine the effect of height, weight and SIMD on the ocular biometric components and interocular asymmetry.

Results: Height, weight and SIMD were positively correlated to AL ($p<0.001$) but not ACD. Height and weight were both negatively correlated to Km ($p<0.001$). Height was inversely correlated to interocular Km asymmetry ($p<0.001$). Weight and SIMD demonstrated no significant correlation with interocular asymmetry of the ocular dimensions.

Conclusion: Longer AL was found in taller, heavier and more affluent adults. Taller and heavier persons have a flatter cornea profile of less convex dioptric power. ACD was free from the influence of adult stature and sociodemographic status. Findings suggest strong environmental determinants for AL, Km and ACD, but not the interocular asymmetry of these ocular dimensions.

190. Systematic review of endophthalmitis in Boston type 1 keratoprosthesis

Carlos M P D Santos, Venkata S Avadhanam, Samuel T Cole, Christopher S C Liu
Brighton and Sussex Medical School

Introduction: The Boston type 1 keratoprosthesis (Boston KPro) is the most commonly used keratoprosthesis. Improvements to the design and materials together with an improved postoperative management have led to an expansion of its indications and a reduction in the incidence of endophthalmitis.

Purpose: To systematically analyse the reports of Boston KPro, and further devise and evaluate the risks and outcomes associated with endophthalmitis.

Method: The Cochrane Library, Embase, Medline and Google Scholar were systematically searched on March 9th 2014 for infectious and inflammatory complications following Boston KPro surgery. Original research articles reporting endophthalmitis following surgery were analysed.

Results: Forty-one studies involving 2125 cases met the inclusion criteria. Seventy-seven cases of endophthalmitis were reported (3.62%). The weighted average for onset was 12.52 months. The diseases with highest incidence rates of developing endophthalmitis following Boston KPro, were graft failure (5.19%), pseudophakic bullous keratopathy (5.19%) and Fuchs's dystrophy (5.19%). Fungal infections comprised 26.76% of cases, Gram-positive bacteria 29.58%, Gram-negative bacteria 11.27%, mycobacteria 2.82%, and the remaining 29.57% were either culture negative or the results unknown.

Conclusion: The occurrence of endophthalmitis following Boston KPro has diminished in recent years. However, the wide use of prophylactic antibiotics that focus on Gram-positive organisms may be contributing to the increased incidence of fungal and Gram-negative infections. Follow-up times were short and resulted in a small sample number thus requiring further research with longer follow-up times for better conclusions to be drawn.

191. The Fate of Ophthalmology Trainees in the UK – CCT Holders 2007 to 2010

Varsha Kadaba, Oliver Bowes, Susannah Grant, Michael O'Gallagher, Faisal Idrees, Inderraj Hanspal, Nuwan Niyadurupola
Royal College of Ophthalmologists

Introduction: The CCT allows the holder to work as a consultant ophthalmologist in the UK. Previously little data was collected regarding the fate of CCT holders. Our data set identifies the post- CCT career outcomes of ophthalmology trainees including the subspecialty interest of their substantive or locum post. This data is relevant to both workforce planning and allows current trainees to identify trends in subspecialty interests.

Purpose: To analyse the fate of UK ophthalmology trainees who have been awarded their Certificate of Completion of Training (CCT) between 2007 and 2010.

Method: Career outcomes were researched at a predominantly local level by regional representatives of the Ophthalmic Trainees' Group(OTG) of the Royal College of Ophthalmologists.

Results: Approximately half of CCT holders gained a consultancy post within 1 year with over three quarters of holders in a consultancy post within 2 years. Almost all posts were awarded with subspecialty interest. Medical retina posts accounted for a quarter of all appointments. Approximately half of CCT holders stayed within their training deanery.

Conclusion: Ophthalmology specialist training (OST) produces consultant-ready ophthalmologists, however many trainees undertake at least one year of additional fellowship before securing their post. Trends in CCT appointments and subspecialty interest have remained stable between 2007 and 2010.

PAEDIATRIC OPHTHALMOLOGY

192. Ophthalmic abnormalities in children with specific learning disorder with reading impairment (formerly dyslexia)

Alexandra Creavin, Raghu Lingam, Colin Steer, Cathy Williams
University of Bristol

Introduction: There has been a recent resurge in interest regarding the use of vision-based therapies for the management of dyslexia. There is a lack of robust epidemiological evidence on which to base much-needed guidelines regarding the use of such interventions and despite this many organisations continue to recommend them to patients.

Purpose: To explore associations between dyslexia and ophthalmic abnormalities in children aged 7-9 years.

Method: Cross-sectional analysis of data from the Avon Longitudinal Study of Parents and Children UK birth cohort, was performed. Reading impairment was defined according to DSM-V criteria. Children with severe learning difficulties, blindness or IQ less than 70 were excluded. Ophthalmic abnormalities including visual acuity, refraction and binocular function were assessed using standard tests.

Results: Data were available for 5822 children, of whom 172 (3%) had SRI and 479 (8%) had moderate reading impairment. No association was found between SRI and strabismus, motor fusion, sensory fusion at a distance, refractive error, amblyopia, convergence, accommodation or contrast sensitivity. SRI was associated with reduced stereoacuity (adjusted OR[95% CI]) (1.58 [1.01-2.47]) and with abnormal near sensory fusion (1.63 [1.02-2.60]).

Conclusion: SRI was not associated with increased abnormalities in most measures of binocular vision, refractive error, or ocular alignment. The reduction of stereoacuity seen was clinically insignificant. Abnormal sensory fusion at near may be a consequence of SRI or be associated with a minority of SRI cases, but further work is needed to confirm this. We found no evidence to suggest vision-based treatments would be useful for children with SRI.

193. Are Paediatric Clinic DNA Rates Affected by School Holidays and Inclement Weather?

Gwyn Williams, Christopher Blyth, David Laws
Singleton Hospital, Swansea

Introduction: It is a long held myth that in paediatric ophthalmology departments across the UK the 'did not attend' rate (DNA) is higher during school holidays and fair weather.

Purpose: To determine, using ANOVA, whether DNA rates in paediatric clinics are affected by school holidays or weather conditions.

OPTIVE *FUSION*™

WITH INNOVATIVE NEXT GENERATION TECHNOLOGY FOR SUPERIOR RESULTS[1,2]

For the first time ever, HA, CMC and osmoprotectants have been combined. Now you can relieve the signs and symptoms of your dry eye patients with one powerfully soothing drop.[3] It's a perfected polymer combination, and it's only from OPTIVE®.[3]

UK/0135/2015 Date of Preparation: March 2015

1. Simmons PA et al. Presented at TFOS conference. Taormina, Sicily in 2013.
2. Chen W et al. Presented at International Society for Eye Research, San Francisco in 2014. **3.**Data on file, Allergan, Inc.; Protocol 10078X-001.

optive® FAMILY

ALLERGAN Ophthalmology

Method: DNA rates for 356 Singleton hospital paediatric ophthalmology clinics were extracted from computer records, constituting every clinic from 2nd January 2013 to 10th June 2014 and a total of 7322 patient episodes. The DNA rates were then compared against the occurrence of school holidays as well as meteorological data in the form of wind speed, precipitation, barometric pressure and temperature.

Results: A multivariate analysis of these results was performed using ANOVA. No statistically significant relationship was found in relation to holidays being associated with higher DNA rates but higher rainfall was associated with a higher DNA rate in the paediatric clinic. No other variable was significant.

Conclusion: The paediatric clinic DNA rate is not higher during fine weather and school holidays but is higher during periods of higher rainfall.

194. Non-contact ultra-widefield retinal imaging of infants with suspected abusive head trauma

Imran Yusuf, J. Kate Barnes, Timothy H.M. Fung, John S. Elston, C.K. Patel
Oxford Eye Hospital

Introduction: Abusive head trauma (AHT) is the most common cause of traumatic death in infancy. The detection and documentation of retinal haemorrhages is critical, both clinically and medicolegally.

Purpose: To evaluate the feasibility of non-contact ultra-widefield retinal imaging in infants with suspected abusive head trauma.

Method: A single-centre interventional case series was undertaken. Eight eyes of four consecutive infants (aged 1-6 months) with suspected AHT were included. Each underwent retinal imaging using the Optos P200MA scanning laser ophthalmoscope. Ultra-widefield fundus fluorescein angiography (FFA) was performed in one infant with oral sedation. The other three infants did not require sedation. The main outcome measure was the acquisition of a single, definitive ultra-widefield retinal image in each eye. Safety was evaluated by adverse changes in heart rate or oxygen saturations that required cessation of imaging.

Results: The Optos P200MA acquired excellent ultra-widefield retinal images in all infants with suspected AHT. Documentation of widespread intra-retinal haemorrhages contributed to a diagnosis of AHT in two infants. Chronic pre-macular haemorrhage and macular schisis in proven AHT was documented by ultra-widefield FFA in a third infant. The absence of retinal haemorrhages was documented in a fourth infant with consequent exclusion of AHT.

Conclusion: The Optos P200MA ultra-widefield scanning laser ophthalmoscope provides high-quality, ultra-widefield retinal images. It is a feasible alternative to RetCam to document retinal haemorrhages in stable infants with suspected AHT.

195. Study of Optimal Perimetric Testing In Children (OPTIC) – Comparing Goldmann and Octopus kinetic perimetry in children without visual field defects.

Dipesh Patel, Phillippa Cumberland, Isabelle Russell-Eggitt, Bronwen Walters, Jugnoo Rahi, for the OPTIC study group
UCL Institute of Child Health

Introduction: Goldmann perimetry is the current gold-standard kinetic visual field (VF) test in paediatric practice, but is no longer commercially available, so there is a pressing need to investigate the value of other perimeters.

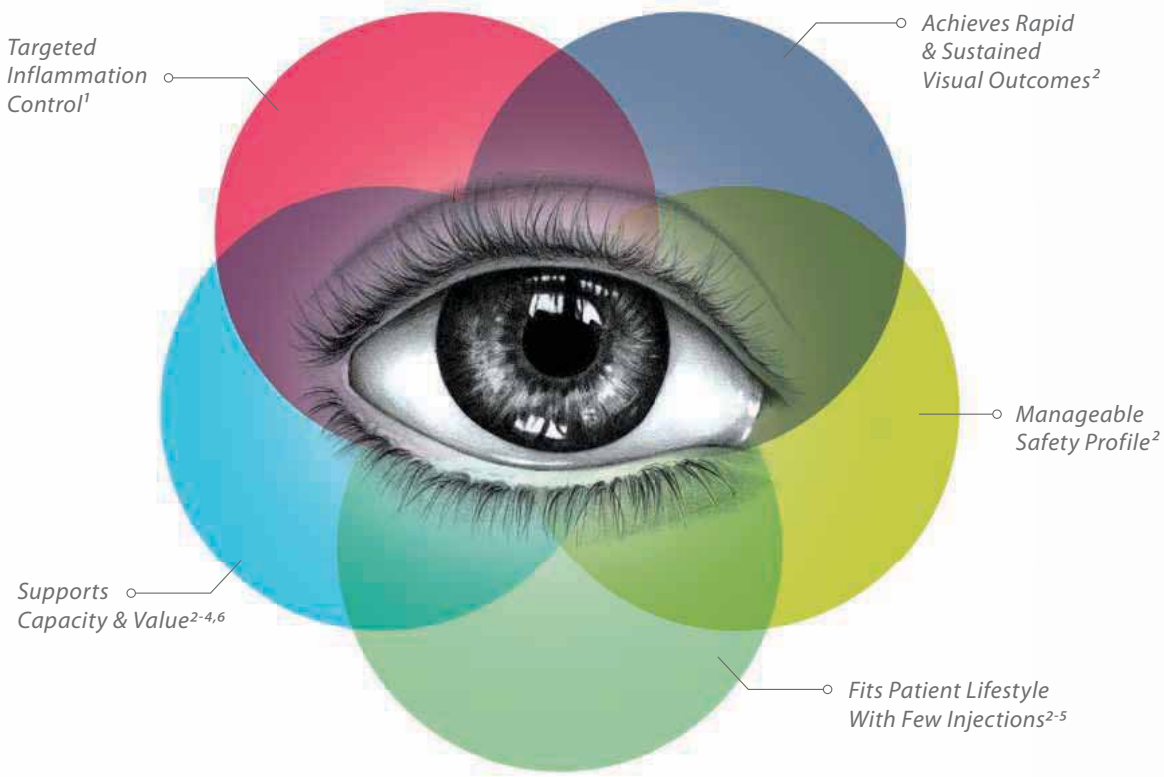
Purpose: We describe normative values in children for kinetic perimetry undertaken using Goldmann and Octopus 900 perimeters and compare outputs to inform future policy/practice.

Method: 154 children aged 5-15 years, and without ocular pathology that could cause a visual field defect, underwent kinetic perimetry with both Goldmann and Octopus perimeters using standardised protocols, plotting two isopters and a blind spot. Linear quantile mixed-effects regression models (lqmm) of raw data were used to describe normative isopter shape.

Results: Visual field area increased with age for Goldmann isopters III4e, I4e and I2e (linear regression, $p<0.001$) and Octopus isopters III4e and I4e ($p<0.001$ and $p=0.005$ respectively). No significant difference between Goldmann and Octopus VF area was found when comparing isopters III4e ($p=0.224$), I4e ($p=0.205$) and I2e ($p=0.376$). However, lqmm (graphical) outputs demonstrated small, clinically apparent differences in isopter shape and normative confidence estimates between Goldmann and Octopus fields for all plotted isopters e.g. a larger nasal field corresponded with a smaller temporal field, maintaining total VF area.

Conclusion: Kinetic perimetry using the Octopus produces findings consistent with, but not identical to, the Goldmann perimeter in children without VF defects. Thus, interpretation of kinetic fields should be based upon age-specific normative data developed for specific perimeter models. Children undergoing serial VF tests should be assessed using the same model of perimeter at each visit.

SEE THE DIFFERENCE WITH OZURDEX®



TREATING DMO, RVO AND UVEITIS FROM MULTIPLE ANGLES

OZURDEX® (Dexamethasone 700 micrograms intravitreal implant in applicator) Abbreviated Prescribing Information
Presentation: Intravitreal implant in applicator. One implant contains 700 micrograms of dexamethasone. Disposable injection device, containing a rod-shaped implant which is not visible. The implant is approximately 0.46 mm in diameter and 6 mm in length. **Indications:** Treatment of adult patients: with macular oedema following either Branch Retinal Vein Occlusion (BRVO) or Central Retinal Vein Occlusion (CRVO), inflammation of the posterior segment of the eye presenting as non-infectious uveitis and visual impairment due to diabetic macular oedema (DME) who are pseudophakic or who are considered insufficiently responsive to, or unsuitable for non-corticosteroid therapy. **Dosage and Administration:** Please refer to the Summary of Product Characteristics before prescribing for full information. OZURDEX must be administered by a qualified ophthalmologist experienced in intravitreal injections. The recommended dose is one OZURDEX implant to be administered intra-vitreally to the affected eye. Administration to both eyes concurrently is not recommended. Repeat doses should be considered when a patient experiences a response to treatment followed subsequently by a loss in visual acuity and in the physician's opinion may benefit from retreatment without being exposed to significant risk. Patients who experience and retain improved vision should not be retreated. Patients who experience a deterioration in vision, which is not slowed by OZURDEX, should not be retreated. In RVO and uveitis there is only very limited information on repeat dosing intervals less than 6 months. There is currently no experience of repeat administrations in posterior segment non-infectious uveitis or beyond 2 implants in Retinal Vein Occlusion. In DME there is no experience of repeat administration beyond 7 implants. Patients should be monitored following the injection to permit early treatment if an infection or increased intraocular pressure occurs. Single-use intravitreal implant in applicator for intravitreal use only. The intravitreal injection procedure should be carried out under controlled aseptic conditions as described in the Summary of Product Characteristics. The patient should be instructed to self-administer broad spectrum antimicrobial drops daily for 3 days before and after each injection. **Contraindications:** Hypersensitivity to the active substance or to any of the excipients. Active or suspected ocular or periocular infection including most viral diseases of the cornea and conjunctiva, including active epithelial herpes simplex keratitis (dendritic keratitis), vaccinia, varicella, mycobacterial infections, and fungal diseases. Advanced glaucoma which cannot be adequately controlled by medicinal products alone. Aphakic eyes with ruptured posterior lens capsule. Eyes with Anterior Chamber Intraocular Lens (ACIOL), iris or transscleral fixated intraocular lens and ruptured posterior lens capsule. **Warnings/Precautions:** Intravitreous injections, including OZURDEX can be associated with endophthalmitis, intraocular inflammation, increased intraocular pressure and retinal detachment. Proper aseptic injection techniques must always be used. Patients should be monitored following the injection to permit early treatment if an infection or increased intraocular pressure occurs. Monitoring may consist of a check for perfusion of the optic nerve head immediately after the injection, tonometry within 30 minutes following the injection, and biomicroscopy between two and seven days following the injection. Patients must be instructed to report any symptoms suggestive of endophthalmitis or any of the above mentioned events without delay. All patients with posterior capsule tear, such as those with a posterior lens (e.g. due to cataract surgery), and/or those who have an iris opening to the vitreous cavity (e.g. due to iridectomy) with or without a history of vitrectomy, are at risk of implant migration into the anterior chamber. Implant migration to the anterior chamber may lead to corneal oedema. Persistent severe corneal oedema could progress to the need for corneal transplantation. Other than those patients contraindicated where OZURDEX should not be used, OZURDEX should be used with caution and only following a careful risk benefit assessment. These patients should be closely monitored to allow for early diagnosis and management of device migration. Use of corticosteroids, including OZURDEX, may induce cataracts (including posterior subcapsular cataracts), increased IOP, steroid induced glaucoma and may result in secondary ocular infections. The rise in IOP is normally manageable with IOP lowering medication. Corticosteroids should be used cautiously in patients with a history of *ocular herpes simplex* and not be used in active *ocular herpes simplex*. OZURDEX is not recommended in patients with macular oedema secondary to RVO with significant retinal ischemia. OZURDEX should be used with caution in patients taking anti-coagulant or anti-platelet medicinal products. **Interactions:** No interaction studies have been performed. Systemic absorption is minimal and no interactions are anticipated. **Pregnancy:** There are no adequate data from the use of intravitreally administered dexamethasone in pregnant women. OZURDEX is not recommended during pregnancy unless the potential benefit justifies the potential risk to the foetus. **Lactation:** Dexamethasone is excreted in breast milk. No effects on the child are anticipated due to the route of administration and the resulting systemic levels. However OZURDEX is not recommended during breast-feeding unless clearly necessary. **Driving/Use of Machines:** Patients may experience temporarily reduced vision after receiving OZURDEX by intravitreal injection. They should not drive or use machines until this has resolved. **Adverse Effects:** In clinical trials the most frequently reported adverse events were increased intraocular pressure (IOP), cataract and conjunctival haemorrhage*. Increased IOP with OZURDEX peaked at day 60 and returned to baseline levels by day 180. The majority of elevations of IOP either did not require treatment or were managed with the temporary use of topical IOP-lowering medicinal products. 1% of patients (4/347 in DME and 3/421 in RVO) had surgical procedures in the study eye for the treatment of IOP elevation. The following adverse events were reported: Very Common (≥ 1/10): IOP increased, cataract, conjunctival haemorrhage*. Common (≥1/100 to <1/10): headache, ocular hypertension, cataract subcapsular, vitreous haemorrhage*, visual acuity reduced*, visual impairment/disturbance, vitreous detachment*, vitreous floaters*, vitreous opacities*, blepharitis, eye pain*, photopsia*, conjunctival oedema*, conjunctival hyperaemia. Uncommon (≥1/1,000 to <1/100): migraine, necrotizing retinitis, endophthalmitis*, glaucoma, retinal detachment*, retinal tear*, hypotony of the eye*, anterior chamber inflammation*, anterior chamber cells/flares*, abnormal sensation in eye*, eyelids pruritus, scleral hyperaemia*, device dislocation* (migration of implant) with or without corneal oedema, complication of device insertion* (implant misplacement). (*Adverse reactions considered to be related to the intravitreous injection procedure rather than the dexamethasone implant). Please refer to Summary of Product Characteristics for full information on side effects. **Basic NHS Price:** £870 (ex VAT) per pack containing 1 implant. Marketing **Authorisation Number:** EU/1/10/638/001. **Marketing Authorisation Holder:** Allergan Pharmaceuticals Ireland, Castlebar Road, Westport, Co. Mayo, Ireland. **Legal Category:** POM. **Date of Preparation:** September 2014.

Adverse events should be reported. Reporting forms and information can be found at **www.yellowcard.mhra.gov.uk.** Adverse events should also be reported to Allergan Ltd. **UK_Medinfo@allergan.com** or **01628 494026.**

References: 1. Nehme A, Edelman J. Dexamethasone inhibits high glucose-, TNF-alpha-, and IL-1beta-induced secretion of inflammatory and angiogenic mediators from retinal microvascular pericytes. Invest Ophthalmol Vis Sci. 2008;49(5)2030-38. **2.** Boyer DS et al. Three-Year, Randomized, Sham-Controlled Trial of Dexamethasone Intravitreal Implant in Patients with Diabetic Macular Edema. Ophthalmology. 2014; 121(10):1904-14. **3.** Haller JA, Bandello F, Belfort R Jr, et al. Dexamethasone intravitreal implant in patients with macular edema related to branch or central retinal vein occlusion twelve-month study results. Opthalmology. 2011; 118:2453-60. **4.** Lowder C, Belfort R, Jr, Lightman S, et al. Dexamethasone intravitreal implant for noninfectious intermediate or posterior uveitis. Arch Ophthalmol. 2011; 129:545-53. **5.** Kuppermann BD, Haller JA, Bandello, F, et al. Efficacy of Dexamethasone Intravitreal Implant for Best Corrected Visual Acuity in Patients With Retinal Vein Occlusion After 7 Days. Invest Ophthalmol Vis Sci 2011;52:E-abstract 3966. Presented at ARVO 2011, May 1-5; Fort Lauderdale, USA. **6.** National Institute for Health and Clinical Excellence. NICE technology appraisal guidance 229; July 2011. Available at www.nice.org.uk [accessed July 2013].

ALLERGAN Ophthalmology

Date of preparation: March 2015 UK/0162/2015

Ozurdex® (dexamethasone intravitreal implant) 0.7mg

196. Bilateral Congenital Dacryocystoceles: Now you see it, now you don't

Lien Brett, John Bradbury, Peter Atkinson
Bradford Royal Infirmary

Introduction: Bilateral dacryocystoceles is a rare anomaly and can lead to respiratory distress and problems with feeding requiring urgent ENT involvement.

Purpose: We present a case of a one day old neonate with bilateral dacryocystoceles.

Method: Illustrative case report and literature review.

Results: Serial photographs demonstrate resolution of the dacryocystoceles following conservative management.

Conclusion: Bilateral dacryocystoceles may cause obstruction of the nasal airway and be life threatening. Urgent ENT referral is needed as surgical intervention may be required.

197. Visual Acuity And Associations In Children With High Hypermetropia

Hugh Jewsbury, Patrick Watts, Marian Okeya, William John Watkins, Sailesh Kotecha
University Hospital Of Wales, Cardiff

Introduction: Conflicting evidence exists regarding the visual outcomes of highly hypermetropic children.

Purpose: To report the outcomes and associations of children with high hypermetropia.

Method: Children with hypermetropia > 5 dioptres were identified from a database. Age, gender, visual acuity, refraction, presence of strabismus, duration of follow up and systemic associations were recorded. Children with < 6 months follow up or without a crowded acuity were excluded.

Results: 103 children were included with 57 of them boys. Mean age at presentation and final follow up was 3.6 ±1.9 years and 6.3±1.8 years respectively with a mean follow up of 33±21 months (range 6 -124 months). Mean hypermetropia was 7.07 ±1.5 dioptres. 50% of children had an esotropia. The mean presenting and final visual acuity was 0.46± 0.28 LogMAR and 0.21±0.15 LogMAR respectively. There was a significant association between the degree of hypermetropia and the final visual acuity ($P<0.05$). There was no association between the age of presentation and the final visual acuity. Residual amblyopia was present in 34%. 11 children had developmental delay or a syndromic condition.

Conclusion: One third of children with high hypermetropia have residual amblyopia. A significant number of children have strabismus.

The prevalence of residual amblyopia in this study reinforces reports of suboptimal visual outcomes in high hyperopes and refutes previous studies suggesting excellent visual outcomes in these patients. Carers of high hyperopes can be better informed at the outset of treatment regarding the possible visual outcomes and associations of high hypermetropia.

198. Sight-threatening deficiency of vitamin A in young males with autistic spectrum disorder

Fatemeh Shams, David Mansfield
Inverclyde Royal Hospital

Introduction: Which patients in the UK are at risk of blindness from severe deficiency of vitamin A? Extreme dietary restriction is a feature of autistic spectrum disorder (ASD). The recommended daily amount of vitamin A is small, but in ASD dietary intake may be so low for so long that blindness ensues.

Purpose: This study examined the diets of males in the age range 7 to 26 years who presented with recent onset of blindness or near blindness (acuity <6/60). Their serum vitamin A concentrations were 0.3 to 0.4 micrograms per litre (normal range 1.0 to 3.0). It then followed their progress clinically and by electroretinography after restoration of the titre to normal.

Method: Detailed dietary questionnaires were completed with the assistance of the parents. Their estimated intake of vitamin A in recent years was compared with measured serum concentrations. Potential causes of malabsorption were excluded.

Results: Each of these patients had refused foods containing vitamin A for several years. The resulting concentrations of vitamin A in their blood are comparable to levels reported in the medical literature as low enough to cause blindness. However, vitamin A might not be the only critically-reduced component of their diet, since the sight may not recover with supplementation of that vitamin.

Conclusion: Ophthalmologists need to be alert to the dietary consequences of ASD. Carers looking after children and young adults with ASD also need to be aware that very poor diet may cause blindness, and ensure supplementation.

199. Internal ophthalmoplegia in children treated with anti-ganglioside antibodies for stage 4 advanced neuroblastoma

Evangelos Drimtzias, Danielle Guy, David Dunleavy, Susan Picton, Ian Simmons
St James University Hospital, Leeds, UK

Introduction: Approximately 40% of children with neuroblastoma present with high-risk disease and poor long-term survival rates. Only 35% of these patients remain disease-free after treatment. Ganglioside GD2 is strongly expressed on human neuroblastoma cells. Therefore, it is an interesting target for the treatment with monoclonal antibodies against GD2 to increase survival rate.

Purpose: This study was undertaken to analyze unusual ocular symptoms in children randomized to receive immunotherapy with anti-ganglioside antibodies.

Method: Six children with ocular symptoms were identified. Median age at diagnosis of neuroblastoma was 46,8 months. Mean follow-up period since presentation was 25,6 months.

Results: Mydriasis and bilateral accommodation deficit were the only ocular symptoms and were present in all children. Mydriasis was unilateral in two cases. The ocular symptoms occurred in relation to the first course of antibody detected 6 days on average after the commencement of therapy. All children recovered completely 2 months on average post-therapy without any further treatment. A + 3 DS addition was used in all cases for a total period of up to 10 months.

Conclusion: Recent immunohistochemical studies indicated the presence of GD2 in the ciliary muscle and iris, so a cross-reaction with the antibody is possible. Mydriasis and accomodation deficit are common following intravenous infusion with anti-GD2 antibodies. Both symptoms together point to decreased activity of the parasympathetic fibers and are reversible not warranting termination of treatment. Short-term optical treatment with bifocals can provide symptomatic relief during the immunotherapy. A therapeutic attempt with pilocarpine may be useful.

200. UK population-based surveillance study into choroidal neovascularisation in children

Mariya Moosajee, Catey Bunce, Barny Foot, Anthony Moore, James Acheson
Moorfields Eye Hospital

Introduction: There are no prospective epidemiological studies for childhood choroidal neovascularisation (CNV) in the literature.

Purpose: To determine the UK incidence, demographics, aetiology, management and visual outcome for children developing CNV.

Method: Children under 16 years old with newly-diagnosed CNV were identified prospectively through BOSU from Jan 2012 to Dec 2013 (card return rate 75%) with data obtained from incident and 1-year follow-up questionnaires.

Results: Twenty-six children with CNV were reported. The UK estimated annual incidence for those aged 16 and under was 0.21 per 100,000 (95% CI:0.133-0.299). Demographics: mean age 11.1 years (SD 3.9, range 3.8-16.1); 50% male; 77% Caucasian British. Median duration of symptoms was 31 days (range 1-252), 19% were asymptomatic, and 77% unilateral presentation. Main sources of referral were optometrists (26.9%) and hospital follow-up/surveillance (26.9%). Most common aetiology included inflammatory choroidopathy (n=9) and optic disc abnormalities (n=9). Presenting mean (SD) BCVA in LogMAR was 0.76(0.57). Location of CNV: peripapillary (23%); peripapillary extending to macula (27%); macula only (50%). Investigations performed; OCT (100%) and FFA (61%). Management included observation only (n=9), anti-VEGF injection of bevacizumab (n=14) or ranibizumab (n=3), with 4 patients receiving up to 4 injections over the following year. Mean (SD) BCVA in logMAR at 1 year was 0.88(0.57). Only one patient was eligible for blind registration.

Conclusion: This is the first population-based prospective study that confirms CNV in children is rare, main aetiology was inflammatory choroidopathy and optic disc abnormalities. Visual prognosis was poor despite the use of anti-VEGF therapy.

201. A review of guidelines for Ophthalmology screening of children with sensorineural deafness

Ahmed Hamroush, Vernon Geh
Southend Hospital

Introduction: Sensorineural deafness affects 1-2 every 1000 babies born in the UK. Several studies have shown a correlation between sensorineural deafness and ophthalmic pathology. Current guidelines recommend that all patients with this condition to be referred for an ophthalmological assessment.

Purpose: We believe that current guidelines need review as they lead to many unnecessary referrals and place a burden on overstretched paediatric ophthalmology clinics. The timings of referrals are also inappropriate in many cases leading to repeat clinic visits adding more stress on children and their parents.

Method: Literature review.

Results: A major flaw of the present guidelines is its dependance on old studies when large proportion of deaf blindness were due to Rubella which is now extremely rare.

Another often quoted reason for referral is to exclude Usher syndrome. Type 1 Usher in particular affects vision early during childhood. However, it is also associated with severely damaged vestibular system and delayed motor development and a normal fundus examination would not exclude this condition as it may be normal in early disease.

The majority of ophthalmic findings in deaf children were refractive errors which can be managed by opticians.

Conclusion: We suggest referrals to be made if there are specific concerns regarding vision, night vision, balance problems, delayed motor development or a family history of Ushers. In the absence of specific aetiology, visual symptoms or parental concerns, it is reasonable for deaf children to be assessed by opticians at age 4-5 years.

202. Retinopathy of prematurity (ROP) in 23 and 24-week gestation babies between 2000-2013 in Newcastle

Ayad Shafiq, David Cottrell, Alan Fenton
RVI Newcastle

Introduction: We analysed data for the most at risk group of babies over a 13 year interval in a large neonatal unit in the North of England. This retrospective data analysis provides useful data on incidence of ROP as well as a benchmark for results of treatment for this group of babies in a single centre.

Purpose: We set out to ascertain the incidence of threshold ROP in 23 and 24-weekers, the severity and type of the ROP, and the outcomes of treatment. We compared this to published data on this fragile age group.

Method: This was a retrospective consecutive case series analysis.

Results: Over the 13 year period 72 23-weekers and 183 24-weekers were born, with 36 (50%) 23-weekers and 113 (62%) 24-weekers surviving into the screening period. Data existed for 35 23-weekers and 96 24-weekers. Of these 24 (69%) 23-weekers and 49 (51%) 24-weekers were treated for threshold ROP. 64 were treated with laser, whilst 9 (all zone 1 ROP) received avastin injection. 13 23-weekers and 13 24-weekers had zone 1 disease. Resolution occurred in 72 (98%). One baby (2%) progressed to bilateral detachment and did not survive to term. Visual acuity data was retrieved where available.

Conclusion: This is the largest consecutive single centre case series of sub 25-weekers reported to date. The incidence of babies requiring treatment is over 50% and is higher than in other series. Zone 1 ROP has a 30 to 56% retinal detachment rate after treatment in other publications. In this series, one baby detached. These excellent results set a benchmark for anatomical success in extremely premature babies treated in a single centre.

203. Severe corneal complications in children with blepharitis

Diyaa Rachdan, M. Saad Khan, Asim Ali, Kamiar Mireskandari
The Hospital for Sick Children, Toronto

Introduction: Blepharitis is a chronic inflammation of lid margins that can lead to spectrum of ocular surface involvement such as phlyctenules, neovascularization, lipid deposits, scarring and irregular astigmatism. In children, these may compromise visual acuity and lead to amblyopia.

Purpose: In this study we report the visual outcome of corneal complications in paediatric blepharitis.

Method: Records of all children with blepharitis seen between 2006-13 were reviewed. Inclusion criteria were corneal lesions due to blepharitis (new vessels, inflammation, opacity, thinning, or lipid deposits) and follow-up of ≥6 months. Other ocular pathologies that might affect vision were excluded. Initial and final BCVA, medications and surgical procedures were recorded.

Results: We identified 123 patients with mean age of 8.0 years (0.8 – 17.3) and follow-up of 30.4 months. Central pathology was present in 35% of all eyes and 60% of patients needed systemic antibiotics. Final visual acuity worse than 6/12 was associated with requiring corneal surgery (odds ratio: 4.69), presence of central pathology (OR; 3.05), and needing topical steroids (OR: 1.57). Eleven patients required surgical intervention: (9 DALK, 1 superficial keratectomy and 1 patch graft

Conclusion: Blepharokeratoconjunctivitis is a serious disease in children and affects the central cornea early, with or without peripheral lesions, in a significant proportion of children. Central scars occur in a third of eyes resulting in poor visual outcome and need for topical steroids and surgery. Lamellar corneal surgery restores media clarity but vision can be limited by amblyopia in half of cases.
A heightened level of vigilance and early intervention is required to prevent vision loss.

204. Incidence of Severe Retinopathy of Prematurity Requiring Laser Treatment in Glasgow

Dilys Oladiwura, Donncha Mullin, Seen Nee Chia, Aonghus McGivney, Tim Lavy
Royal Hospital for Sick Children Yorkhill Glasgow

Introduction: Retinopathy of prematurity (ROP) is an important cause of preventable childhood blindness. In the city of Glasgow, ROP screening is provided at three centres including a paediatric tertiary hospital. Glasgow is a city known for its high levels of social deprivation.

Purpose: We aim to study the overall incidence and yearly trends of severe ROP requiring laser treatment in this city.

Method: A retrospective study of 1070 preterm neonates screened between March 1 2004 and April 30 2013. The associations between known clinical risk factors and severe ROP were analyzed using univariate analysis and multivariate logistic regression analysis.

Results: The overall incidence of severe ROP requiring laser treatment in this cohort was 6.3%, compared to the overall incidence of any stage ROP of 16.5%. Severe ROP was significantly associated with extreme low birth weight<1000g ($p<0.0001$) and gestational age<27 weeks ($p<0.0001$). Over this decade, there were fluctuating peaks in yearly incidence of severe ROP but no clear demonstrable trend. However the overall incidence of severe ROP had marginally decreased from 8.6% a decade earlier.

Conclusion: The incidence of severe ROP requiring treatment over the last decade was 6.3%, similar to the published incidence in other western populations despite the deprivation profile within Glasgow. Improved obstetric and neonatal healthcare services has led to increasing survival rates in extremely low birth weight preterm neonates with stable incidence of severe ROP.

205. Asymptomatic Optic Disc swelling in children: Papilloedema or not?

Yun Wong, Michael Clarke, Georgios Laspias
RVI Newcastle

Introduction: There are an increasing number of children referred to paediatric ophthalmology with asymptomatic optic disc swelling. These children are at risk of being subjected to unnecessary brain imaging and lumbar puncture.

Purpose: To identify clinical and OCT features suggesting a diagnosis of pseudopapilloedema in children.

Method: A retrospective case series of consecutive children who were referred with bilateral optic discs swelling in the last 12 months. Clinical, autofluorescence and OCT features are described.

Results: 8 children with an average age of 11 were included. Mean presenting visual acuity was -0.05 LogMar. All children were referred from routine community sight tests with raised disc margins and all were asymptomatic. Auto florescence did not show evidence of optic disc drusen. Spectralis OCT demonstrated bilateral disc swelling in all of the children with the inferior margin of the disc most significantly raised. A diagnosis of pseudopapilloedema was made in all children and none were referred for neuroimaging or lumbar puncture.

Conclusion: Pseudopapilloedema in children is challenging to diagnose. Papilloedema must of course be ruled out and an accurate history and examination is necessary. Spectralis OCT can help identify disc swelling and within our series the inferior disc margin was most commonly involved.

206. Child-parent agreement on patient-reported outcome measures (PROMs) of visually impaired child's quality of life and functional vision

Val Tadic, Phillippa Cumberland, Gillian Lewando Hundt, Jugnoo Rahi
UCL Institute of Child Health

Introduction: Children and parents frequently disagree in their ratings of children's health-related outcomes. In the absence of vision-specific measures, such disagreement has rarely been investigated in visually impaired (VI) children.

Purpose: To report the variation by demographic and clinical characteristics in parent-child disagreement in reporting the child's vision-related quality of life (VQoL), functional vision (FV) and health-related quality of life (HRQoL).

Method: In a national postal survey, 101 VI children and their parents completed the child and proxy versions of our novel instruments for children and young people (the VQoL_CYP and the FVQ_CYP) together with a generic HRQoL measure (PedsQL: Generic, Psychosocial&Physical Health). Parent-child agreement was investigated using the Bland-Altman technique.

Results:

- Parents on average rated their children as having lower VQoL (mean difference 5.7 [95%CI=2.8,8.6] and HRQoL (6[3.4,8.5]) and higher FV difficulty (-11.1[-14,-8.1]) than did the children.
- Wide range of parent-child disagreement (limits of agreement: VQoL_CYP: -22.10,33.50; FV: -39.75,17.65; PedsQL-Generic: 17.20,29.20; PedsQL-Psychosocial: -19.80,35; PedsQL-Physical: -24.20,30.20).
- Parents both over and underestimated their child's VQoL and generic and psychosocial HRQoL, but consistently underestimated FV.
- Observed patterns were largely consistent across children's demographic and clinical characteristics (eg vision level), except for vision level where parents tended to underestimate physical health of VI children who self-rated with higher scores.

Conclusion: Our findings are in keeping with the broader literature on the nature and extent of discrepancy between child and parent ratings of the child's health outcomes, highlighting the importance of capturing both perspectives in order to comprehensively gauge the impact of childhood visual disability and tailor appropriate interventions.

207. Evaluation of a Novel Digital Infant Acuity Test

Laura Butler, Esther Misanjo, Iain Livingstone
Lions Sight First Eye Unit

Introduction: Infant acuity testing is vital in treatment and prevention of amblyopia. Current card-based standards have problems of portability, child engagement and expense. Digital devices provide potential to resolve many of these limitations but have not yet been validated

Purpose: To assess the validity of the Peekaboo digital tablet-based acuity test

Method: Children aged 6 to 60 months who presented to the Eye Unit were eligible. Acuity was measured using "gold standard" Keeler cards and the Peekaboo digital test for right, left, and both eyes. Following an interval, patients were re-tested. In addition to age and acuity (recorded in LogMAR), child engagement was recorded using a compliance score (CS) of 0-2 (0 = no engagement, 2 = perfect compliance). The card-based and digital tests were compared using statistical methods described by Bland and Altman

Results: 58 patients with mean age of 33 months were recruited. The average difference in acuity between the modalities was -0.1 (95% lower and upper LoA -0.69, +0.49 respectively). CS averaged 1.5 for the digital test and 1.3 with Keeler ($p<0.001$). On test-retest, the digital test showed an average difference of +0.007 (95% LoA -0.385, +0.370) and Keeler -0.04 (95% LoA -0.683 to +0.674). The digital test demonstrated 95% repeatability coefficient of 0.29, compared with 0.38 for Keeler

Conclusion: The study demonstrates good agreement between digital and card-based methods. The digital test outperformed Keeler in terms of child engagement and reliability. Digital acuity testing represents a promising advance for assessing vision in infants

UVEITIS

208. Outcomes of Intravitreal Ozurdex In Patients With Non-Infectious Uveitis

Mohamad Zaher Kanaan, Ranjeet Pandit
Royal Victoria Infirmary

Introduction: Ozurdex® is a biodegradable implant which releases dexamethasone over a period of up to six months. It contains 700mcg of dexamethasone.In June 2011 it was licensed for treatment of non-infectious uveitis. The clinical efficacy of Ozurdex® in the treatment of non-infectious posterior uveitis has been assessed in the HURON study.

Purpose: To report the outcome of Ozurdex treatment in non-infectious uveitis during the year 2013.

Method: We retrospectively studied the notes of 14 patients who had Ozurdex during 2013. 18 eyes received treatment. Patients were followed up for at least 6 months.

Results: The indication for treatment was uncontrolled posterior segment inflammation with or without cystoid macular oedema. Visual acuity on Snellen chart has improved in half of the eyes injected by a mean of 2.33 lines. Mean visual improvement duration was 86.7 days post-op. All eyes with cystoids macular oedema achieved complete regression between 5 to 65 days following Ozurdex implant. CMO recurred in 8 out of 10 eyes (80%) after

ALL THIS AND MORE
STAND 37

PF

All Preservative-free

Phosphate-free

Catacrom®
Main ingredient: Sodium Cromoglicate 2% w/v
Size: 30 x 0.3ml single-dose units
Classification: P

Hydromoor™
Main ingredient: Hypromellose 0.3%
Size: 30 x 0.4ml single-dose units
Classification: CE (Medical device)

Emustil™
Main ingredient:
Soybean Oil 7%, Natural Phospholipids 3%
Size: 20 x 0.3ml single-dose units
Classification: CE (Medical device)

Lubristil®
Main ingredient:
Sodium Hyaluronate 0.15%
Size: 20 x 0.3ml single-dose units
Classification: CE (Medical device)

Lubristil® Gel
Main ingredient:
Sodium Hyaluronate 0.15% and Xanthan Gum 1%
Size: 20x0.4ml single-dose units
Classification: CE (Medical device)

PF DROPS™
Hypromellose 0.3%
Main ingredient: Hypromellose 0.3%
Size: 10ml Ophthalmic Squeeze Dispenser (OSD)
Classification: CE (Medical device)

PF DROPS™
Carmellose Sodium 0.5%
Main ingredient: Carmellose Sodium 0.5%
Size: 10ml Ophthalmic Squeeze Dispenser (OSD)
Classification: CE (Medical device)

PF DROPS™
Carmellose Sodium 1.0%
Main ingredient: Carmellose Sodium 1.0%
Size: 10ml Ophthalmic Squeeze Dispenser (OSD)
Classification: CE (Medical device)

PF DROPS™
Sodium Chloride 5%
Main ingredient: Sodium Chloride 5%
Size: 10ml Ophthalmic Squeeze Dispenser (OSD)
Classification: CE (Medical device)

Adverse events should be reported. Reporting forms and information can be found at www.mhra.gov.uk/yellowcard. Adverse events should also be reported to Moorfields Pharmaceuticals on 020 7684 9090 (option 2). Prescribers should consult the Summary of Product Characteristics in relation to other adverse events.

RCO AD 0315 WAL

ABBREVIATED PRESCRIBING INFORMATION: CATACROM 2% w/v Eye Drops solution PRESENTATION: Eye drops containing Sodium Cromoglicate 2 % without preservative. INDICATION: For the relief and treatment of seasonal and perennial allergic conjunctivitis. DOSAGE AND ADMINISTRATION: Topical ophthalmic use; Adults, children and the elderly: one or two drops into each eye four times per day, or as directed by the doctor. INTERACTION WITH OTHER MEDICINAL PRODUCTS AND OTHER FORMS OF INTERACTION: None known. CONTRAINDICATIONS: Known hypersensitivity to sodium cromoglicate. SPECIAL WARNINGS AND PRECAUTIONS FOR USE: Catacrom® 2% w/v eye drops are sterile, preservative free and presented in a single use container which should be discarded after use. PREGNANCY AND LACTATION: Catacrom® 2% w/v eye drops should be used with caution in pregnancy, especially during the first trimester. UNDESIRABLE EFFECTS: On instillation, transient stinging or burning may occur. Rarely, other symptoms of local irritation have been reported. As with all eye drops, temporary blurring of vision may occur on instillation. Do not drive or operate machinery until normal vision is restored. LEGAL CATEGORY: P BASIC NHS PRICE: £8.99 for pack of 30 x 0.3ml single unit doses. MARKETING AUTHORISATION HOLDER: Moorfields Eye Hospital NHS Foundation Trust trading as Moorfields Pharmaceuticals, 34 Nile Street, London, N1 7TP United Kingdom UK MARKETING AUTHORISATION NO:PL11412/0002 DATE OF REVISION SPC: May 2010

www.moorfieldspharmaceuticals.co.uk
+44 (0)20 7684 9090 (option 1)

MOORFIELDS PHARMACEUTICALS

Moorfields Eye Hospital NHS
NHS Foundation Trust

a mean of 124.3 days post implant. 12 out of 15 eyes (80%) achieved two step decrease in posterior segment inflammation post-op. Reduction of oral Prednisolone dose to <7.5mg daily was achieved in 8 out of 9 patients (88%). There were no reports of pain, subconjunctival haemorrhage or endophthalmitis. 8 out of 18 eyes (44.4%) needed the addition of a pressure lowering agent as a result of raised intraocular pressure. Intraocular pressure spike developed between 5 to 69 days post-op (Mean 28 days). All intraocular pressure complications were managed medically. 2 out of 12 phakic eyes developed posterior subcapsular opacity.

Conclusion: Ozurdex was very effective in the management of non-infectious uveitis. It proved to be a fairly safe drug to use in non-infectious uveitis with the absence of the dreadful complication of endophthalmitis or persistently raised IOP that required surgical intervention.

209. Intravitreal Sirolimus Improves Inflammation and Preserves Visual Acuity in Subjects with Non-Infectious Uveitis (NIU) of the Posterior Segment: Results from SAKURA Study 1

Carlos Pavesio, Yang Yang, Abu Abraham, Marye Ellen Valentine, Michael Rinehart, Rebecca Senic
Moorfields Eye Hospital

Introduction: SAKURA Study 1, a randomized, multinational, double-masked, active control, 24-month study is investigating intravitreal sirolimus monotherapy as a safe and effective chronic treatment option for active NIU of the posterior segment.

Purpose: To present the key results at Month 5 from the double-masked period of SAKURA Study 1.

Method: 347 subjects with baseline vitreous haze (VH) score ≥1.5+ and median baseline best corrected visual acuity (BCVA) of 68 letters were randomized to bimonthly injections of intravitreal sirolimus 44, 440, or 880 µg.

Results: The risk:benefit profile was most favorable with 440 µg: Significantly more patients achieved the primary endpoint of VH=0 with 440 µg vs 44 µg (22.8% vs 10.3%; p=.025). There was a higher rate of VH resolution to 0/0.5+ with 440 µg vs 44 µg (52.6% vs 35.0%; p=.008). BCVA was preserved over the double-masked period: The median BCVA at Month 5 was 75 letters for 440 µg vs 71 letters for 44 µg. Subjects with worse vision at baseline showed greater improvements in BCVA at Month 5: The median BCVA with 440 µg improved by up to 10.5 letters in subjects with baseline BCVA <20/40.

Conclusion: Monotherapy with Intravitreal sirolimus 440 µg significantly improved uveitis-related inflammation while preserving vision in subjects with active NIU of the posterior segment. Clinically significant improvements in vision were achieved in subjects with BCVA <20/40 at baseline.

210. Efficacy and Safety of Rituximab in the Treatment of Ophthalmic Complications of Systemic Vasculitis or Systemic Lupus Erythematosus (SLE)

Christopher Holmes, Shams Ilyas, Hema Kolli, Efrosini Papagiannuli, Matthew Morgan, Susan Mollan, Alastair Denniston
University Hospitals Birmingham NHSFT

Introduction: Rituximab, a monoclonal antibody against CD-20 expressing B-cells, is increasingly used in systemic vasculitis and SLE, but there is limited data on its utility in ocular inflammation associated with these conditions.

Purpose: To evaluate the efficacy and safety of rituximab in the treatment of inflammatory eye disease associated with systemic vasculitis/SLE.

Method: Patients receiving rituximab for non-cancer indications were identified from the pharmacy chemotherapeutic register between 2005-2014. Indication for treatment, eye involvement, response to therapy, reduction of corticosteroid and adverse events/discontinuation were recorded. The primary outcome was control of inflammation.

Results: 119 patients received rituximab for non-cancer indications, with 91 classified as systemic vasculitis or SLE: 52 Granulomatosis with Polyangiitis (GPA), 10 other vsculitis and 29 SLE. In total 25 patients had ophthalmic involvement. The leading type of ophthalmic involvement were scleritis (n=9. Sustained control of inflammation (for at least 28 days) was 38% within 6 months, and 80% within 12 months. Of those previously on a dose of greater than 10mg prednisolone, reduction to 10 mg or less was achieved by 36% at 6 months and by 62% by at 12 months respectively. Rituximab was discontinued prematurely in two patients because of adverse events.

Conclusion: Our data suggests that rituximab is effective for the majority of patients with inflammatory eye disease associated with systemic vasculitis. The rate of adverse events were low.

VITREO-RETINAL DISEASES & SURGERY

211. Sleeping position is a risk factor for retinal vein occlusion

Katerina Constantinou, Nicholas Andreou, Theodoros Potamitis
Pantheo Eye Centre

Introduction: It has been shown previously that the preferred side of sleep may be associated with increased intra ocular pressure. In recognition of the fact that increased IOP may be associated with the development of retinal vein occlusion, we aim to evaluate the effect of sleeping position in patients with RVO events.

Purpose: The purpose of this study is to evaluate if the sleeping position is an associate risk factor in retinal vein events.

Method: Patients with history of RVO were identified from the clinic's database. Following obtaining an informed consent, eligible patients were interviewed and their preferred side of sleep was noted. Results were analysed and their statistical significance was established.

Results: 32% (n=67) of patients have had an RVO on the same side as their preferred side of sleep and 17% (n=36) of patients have had an RVO on the opposite side to their preferred side of sleep According to the results the null hypothesis is rejected (p<5%), indicating, the preferred sleeping position is related to the side where RVO occurs. This correlation is 30.3%.

Conclusion: A patient's preferred side of sleep is associated with an increased incidence of RVO on the same side. This outcome should be incorporated in the clinical advice offered to patients with pre-existing RVO events.

212. Pseudophakic CMO – an evaluation of the effectiveness of Posterior Sub-Tenon Triamcinolone (PSTT) injections

Alasdair Kennedy, Tony Leong, Salwan Rassam, Chee Kon
WSHFT

Introduction: Cystoid macular oedema (CMO) is the most common cause of decreased vision after cataract surgery. Standard treatment for persistent CMO at Worthing and Chichester hospitals is with Gutt Dexamethasone and Acular for one month. Unresponsive cases are referred to the vitreo-retinal (VR) team for a PSTT. Is this an effective treatment and should it be performed prophylactically or as first line?

Purpose: To assess the effectiveness of PSTT treatment for CMO following cataract surgery.

Method: Approximately 3500 cataract operations were performed in 2013 at Worthing and Chichester hospitals with clinical CMO detected in 3%. 23 uncomplicated cases with persistent CMO despite topical therapy and with no known risk factors were referred to the VR team and administered a PSTT injection. These cases were then analysed for this study.

Results: 20 patients had an improvement in their visual acuity (VA). 2 patients required and responded to intra-vitreal triamcinolone. 1 patient's VA didn't improve but felt subjectively that it had. None had a rise in intra-ocular pressure.

Topical therapy leads to improved vision in two thirds of cases with most of the remainder responding to PSTT.

Conclusion: The majority of CMO cases following cataract surgery resolve with treatment but the longer the duration of the oedema, the more photoreceptor damage occurs (25% achieve less than 6/6). PSTT injections improve the VA in these patients but there lacks a well designed RCT to evaluate PSTT use as prophylaxis or as first line treatment.

213. Dome-shaped macular configuration: longitudinal changes in the choroid and sclera by swept-source optical coherence tomography over two years

Abdallah Ellabban, Abdallah Ellabban, Akitaka Tsujikawa, Akio Oishi, Kenji Yamshiro, Sotaro Ooto, Nagahisa Yoshimura
Kyoto University

Introduction: The sclera is the primary determinant of eyeball shape and the main changes in ocular elongation in high myopia take place at the scleral coat, therefore; tracking changes in the sclera may help to elucidate the mechanism underlying the formation of a dome-shaped macular configuration.

Purpose: To study longitudinal changes in the posterior pole in eyes with dome-shaped macular configuration.

Purpose: To present clinical trial and cumulative postmarketing data on the safety profile of ocriplasmin, obtained from the most current PBRER (#3).

Method: Data was obtained from PBRER #3 and consisted of preclinical, clinical trial, and postmarketing data (primarily based on voluntary reports by retina specialists and other healthcare professionals). Post-approval eye exposure was estimated based on the total number of vials shipped by distributors.

Results: A total of 1115 patients were included in the pooled safety data from the ocriplasmin clinical trial program. Adverse event (AE) frequencies were as follows: visual impairment (13.8%), dyschromatopsia (1.7%), retinal edema (9.5%), retinal tear/ retinal detachment (1.9%), and intraocular pressure increased (4.1%). The cumulative postmarketing safety data analysis was based on 10,770 estimated exposures, from October 17, 2012 (date of first PBRER) to April 16, 2014. Frequencies of spontaneous reports were as follows: visual impairment (2.1%), dyschromatopsia (0.5%), retinal edema (0.5%), retinal tear/ retinal detachment (0.5%), and intraocular pressure increased (0.1%).

Conclusion: Ocriplasmin's safety profile from the postmarketing experience data was found to be mostly consistent with that reported in the clinical trials program, and further demonstrates that there is no change in the favorable benefit to risk profile of the drug.

219. INJECT: Investigation of JETREA in Patients With Confirmed Vitreomacular Traction – Interim analysis results

David Steel
Sunderland Eye Infirmary

Introduction: The efficacy and safety profile of ocriplasmin have been established in two Phase 3 vehicle-controlled clinical trials.

Purpose: The purpose of this observational study is to further characterize the safety profile and clinical effectiveness of ocriplasmin in a real-world setting across multiple countries.

Method: Noninterventional, multicenter, multinational study in patients treated with ocriplasmin for the approved indication in their country. Clinical effectiveness characteristics assessed include best-corrected visual acuity (BCVA), pharmacological vitreomacular traction (VMT) resolution, and pharmacologic macular hole (MH) closure. Safety assessments include ocular symptoms and adverse events (AEs).

Results: The interim analysis included 94 patients with complete optical coherence tomography data and at least 28 days of follow-up. The percentage of patients achieving VMT resolution was 29.8% (28/94). In patients with VMT only, the resolution rate was 16.3% (7/43), whereas for patients with VMT with MH, it was 50.0% (18/36). The most frequently reported ocular AEs (≥5 cases) were drug ineffectiveness (8 cases), vitreous floaters (7 cases), photopsia (7 cases), and visual acuity reduced (5 cases).

Conclusion: Interim analysis of the INJECT study shows that the overall rate of VMT resolution is consistent with the rates reported in the phase 3 clinical trials. Frequently reported ocular AEs were consistent with those reported in the phase 3 trials. Data from this study will contribute to the characterization of ocriplasmin efficacy and safety profile, as well as treatment patterns across different countries.

220. Maze navigation: Improving the assessment of functional vision in the RPE65 gene therapy trial

Kareem Mahgoub, Walid Sharif, Andy Rider, Peter Jones, Gary Rubin
UCL Institute of Ophthalmology

Introduction: Maze navigation is a popular task for assessing functional vision. However, some subjects navigate rapidly and are prone to making mistakes, while others navigate slowly and make few errors. This is a classic example of a speed / accuracy trade-off and may account for significant variability in the measurement in visual mobility

Purpose: To provide a more accurate method of measuring differences in functional vision, looking at other variables other than speed/time.

Method: 9 normal controls and 7 visually impaired subjects, traversed different mazes under a range of lighting conditions. Their paths were video recorded and digitalised, step by step, using MatLab software. From these paths, 5 summary variables were examined: total time, number of errors, total distance travelled, summed deviation from the normal path, and a measure of the number correct locations they traversed, based on an optimal path.

Results: Using Pearsons r correlation coefficients, we found that subjects with increasing visual impairment measured by logmar VA not only took longer to complete the mazes on average (r=0.4), but they had more errors (r=0.45), travelled a further distance (r=0.25), deviated further from the "normal path" (r=0.23) and, traversed fewer correct locations (r=-0.16). These correlation were less significant at brighter lighting conditions.

FDA 510k clearance

A high performance ophthalmic platform, leveraging DORC's history in innovation to change the surgical landscape.

- VTi Fluidics
  - Vacuum or flow - surgeon's choice
- TDC
  - Up to 16,000 CPM
  - Unprecedented surgeon control
- LED Illumination
  - 10,000 hours of consistent light output
- Dual capabilities
  - Phaco – MICS 1.8 capable
  - Vitrectomy – 20ga, 23ga, 25ga & 27ga options

Method: We prospectively examined the macular area in 35 eyes (26 patients) with dome-shaped macular configuration and high myopia (mean spherical equivalent, −14.83 ± 4.50 diopters) using swept-source optical coherence tomography. Scleral and choroidal thicknesses were measured at the fovea and four parafoveal locations 2000 µm from the foveal center. Height of the macular bulge was measured as well.

Results: During the mean follow-up of 24.8 ± 2.5 months, the scleral thickness significantly decreased at the fovea from 496.1 ± 95.7 µm to 484.7 ± 96.2 µm (P < .001) and at all four parafoveal locations (P < .001, respectively). The scleral thinning was asymmetric with an estimated decrease per year of 5.62 µm at the foveal center, 11.14 µm superiorly, 12.11 µm inferiorly, 10.39 µm temporally, and 5.79 µm nasally. The ocular concavities deepened over time, and mean macular bulge height increased from 136.5 ± 60.9 µm to 157.6 ± 67.0 µm (P < .001). The choroid within the staphyloma showed generalized thinning during follow-up. Mean choroidal thickness decreased significantly at the fovea from 28.3 ± 17.2 µm at baseline to 22.9 ± 17.2 µm (P < .001).

Conclusion: Progressive asymmetric scleral thinning in the macular region may result in dome-shaped macular configuration. In these eyes, scleral thinning was more pronounced in the perifoveal area than at the macular center, resulting in an increase of the bulge height.

214. Rotational Stability of Toric Intraocular Lens In Presence of Intravitreal Perflouropropane (C3F8) Gas

Milind Sawant, Riaz Asaria
Royal Free Hospital, London

Introduction: This study evaluates behavior of toric IOL when used in conjunction with C3F8 gas bubble in intravitreal cavity following vitrectomy for macular hole combined with phacoemulsification

Purpose: To assess rotational stability of toric IOL in presence of intravitreal C3F8 gas

Method: Retrospective case review of 14 eyes of 14 patients who underwent vitrectomy and internal limiting membrane (ILM) peel with 16% C3F8 gas combined with phacoemulsification with toric IOL implant. All cases had idiopathic full thickness macular hole with cataract with pre-operative astigmatism of more than 2.0 Dcyl. All cases had Rayner T-Flex single piece toric IOL implant, as our eye unit's standard practice for preoperative astigmatism of more than 2.0 Dcyl. As authors' standard audit practice for all toric IOL cases, rotational stability was evaluated using slit lamp retroillumination photographs at 1 day, 6 weeks and 3 months post-operatively, using Apple Mac OS Keynote software program.

Results: The mean rotational misalignment from the intended target axis was 2.4° (SD=1.3) on day 1, 3.1° (SD=0.9) at 6 weeks, 3.4° (SD=1.1) at 3 months post-operatively. The mean pre-operative astigmatism was 2.89 (SD=0.57), while mean post-operative astigmatism was 0.27 (SD=0.11).

Conclusion: Results have shown that presence of C3F8 gas bubble in vitreal cavity did not cause adverse rotational misalignment of toric IOL axis in immediate, early and late postoperative period, thereby indicating that toric IOL implantation can be safely combined with vitrectomy and intraocular gas tamponade as a single procedure.

215. Chronic diabetic macular oedema in pseudophakic eyes that underwent vitrectomy for advanced proliferative diabetic retinopathy

Kunal Gadhvi, A. Hawrami, I. Dooley, C.J. Mckechnie, H.J. Zambarakji
Whipps Cross University Hospital

Introduction: Guidance for the management of diabetic macular oedema in vitrectomised eyes is lacking.

Purpose: To identify the incidence of chronic cystoid macular oedema (CMO) in pseudophakic eyes following pars plana vitrectomy (PPV) for advanced proliferative diabetic retinopathy (PDR).

Method: Retrospective analysis between January 2011 and December 2013. We included eyes that underwent PPV for PDR and were pseudophakic. CMO was defined as at least one cyst on Optical Coherence Tomography (OCT). Log MAR best-corrected visual acuity (BCVA) and central macular thickness (CMT) data at 6-12 months are presented.

Results: 201 diabetic eyes underwent PPV. 22 patients (24 eyes)with a mean age of 63.5 years (34 to 84) met study criteria.

6/19 eyes (31.5%) had chronic CMO, mean CMT was 438 mm (263 to 760) and mean BCVA was 0.9 Log Mar (0.52 to 2.1). 13/19 eyes (68.5%) had no chronic CMO and a mean CMT of 282 mm (200-346). Mean BCVA was 0.66 Log Mar (0.1-2.1) in eyes with no CMO at last follow up.

BCVA did not differ significantly between the 2 subgroups (p=0.37), however CMT was significantly greater in eyes with chronic CMO (p=0.001). In the subgroup with chronic CMO, there was a significant correlation between Log Mar BCVA and CMT at last follow up (p<0.001).

Conclusion: Chronic CMO is a common finding in pseudophakic eyes following PPV for advanced PDR. Further research into the management of CMO in vitrectomised eyes is needed.

216. Whiplash injury and ocular trauma: a case series and literature review

Mary Awad, Paul Chua, Vijay Hegde
Aberdeen Royal Infirmary

Introduction: Ocular injuries following road traffic collisions (RTC) and airbag deployment have been extensively reported. However, the evidence of ocular injury secondary to whiplash trauma is scarce. Previous cases have reported decreased convergence, accommodation, stereoacuity, commotio retinae and retinal dissolution and one case of bilateral PVD following a whiplash injury. We report two unique cases of posterior segment trauma following whiplash injury.

Purpose: We aim to describe two different clinical presentations of ocular trauma following whiplash injury and conduct a literature review.

Method: A case series of two patients (4 eyes).

Results: A 60-year-old female presented with bilateral visual loss immediately following RTC. Optical coherence tomography showed bilateral foveal detachment and perifoveal posterior vitreous detachment (PVD) with traction. A conservative management resulted in resolution of the foveal detachment and her final visual acuity (VA) was 6/5 in the right and 6/9 in the left eye.
Another 60-year-old female presented with blurred vision and floaters soon after a RTC. She was a front seat passenger involved in a rear end collision. Clinical examination revealed bilateral multiple peripheral retinal tears. She underwent successful laser retinopexy for retinal tears. Her final VA was 6/5 in BE.

Conclusion: We conclude that the mechanism of injury leading to a PVD following a RTC is independent of airbag deployment, as the literature to date suggests. We hypothesise that it is the acceleration-deceleration forces exerted that lead to sudden acceleration of the head and anterior vitreous motion that induce a PVD and its recognised retinal complications.

217. Risk of cystoid macular oedema after cataract surgery in eyes with pre-existing epiretinal membrane

Sofia Theodoropoulou, Colin Chu, Quresh Mohamed, Rob Johnston, Ahmed Sallam
Gloucestershire Hospitals NHS Foundation Trust

Introduction: To evaluate the incidence of cystoid macular oedema (CMO) after cataract extraction in a series of eyes with pre-existing epiretinal membrane (ERM).

Purpose: To evaluate the incidence of cystoid macular oedema (CMO) after cataract extraction in a series of eyes with pre-existing epiretinal membrane (ERM).

Method: The RCOphth Cataract National Dataset was prospectively collected within an electronic medical record system (Medisoft Ophthalmology) from a single UK centre. Eyes were treated with either combined pars plana vitrectomy (PPV) and cataract extraction, or cataract extraction only following previous PPV/ERM peeling. The primary outcome was a new diagnosis of CMO within 90 days of cataract surgery.

Results: A dataset of 372 consecutive cataract operations performed between 2006 and 2014 in 372 eyes with pre-existing ERM was reviewed. The overall incidence of post-operative CMO was 8.6%(32 eyes) for patients with only risk factor pre-existing ERM. Fourteen out of 32 eyes, which developed post-operative CMO, had combined PPV with cataract extraction. CMO was clearly linked to cataract operation and cases with CMO related to other conditions such as retinal vein occlusion or diabetic retinopathy were excluded. Differences in risk between eyes that had simultaneous combined cataract extraction/PPV and eyes treated with sequential PPV followed by cataract surgery are analysed. Median time to develop CMO was 44 days (range:5-85 days). Diabetes mellitus was not found to be a significant risk factor (RR=0.38, 95%CI:0.12-1.21).

Conclusion: This is one of the largest studies to report the incidence of CMO after cataract extraction in eyes with pre-existing ERM. Post cataract surgery CMO appears to occur more frequently in these eyes. This data provides evidence for the need to consider additional peri-operative and postoperative treatment in patients with pre-existing ERM.

218. Ocriplasmin Therapy for Vitreomacular Traction: Clinical Trial and Postmarketing Safety

Tim Jackson
King's College London

Introduction: The Periodic Benefit-Risk Evaluation Report (PBRER, previously PSUR) is especially relevant for drugs that have been recently approved by health agencies, as it includes a review of relevant safety information compiled for a drug product in market and through its development.

Conclusion: By looking at these additional variables, one may be able to get a better picture of functional vision, which may help to abrogate the effects of a speed/accuracy trade off.

221. Exploratory analyses of long-term visual outcomes based on baseline vision in patients with chronic and nonchronic diabetic macular oedema (DMO) treated with fluocinolone acetonide (FAc)

Louise Downey, Usha Chakravarthy
FAME trial

Introduction: DMO is commonly treated with vascular endothelial growth factor inhibitors. However, not all patients achieve vision benefits, and poor baseline best corrected visual acuity (BCVA) was shown to predict poor visual outcome following 2-years of treatment.

Purpose: Determine whether baseline acuity influenced outcomes in patients with chronic DMO in the Fluocinolone Acetonide in Diabetic Macular Edema (FAME) studies.

Method: Patients were randomized to receive ILUVIEN (intraocular, nonbioerodible, 0.2 µg/d FAc implant; n=376) or sham control (n=185). Laser therapy was permitted 6 weeks after randomisation. Exploratory analyses examined outcome by baseline visual acuity.

Results: At month 36, 13.4% of control and 34.0% of 0.2 µg/d FAc-treated patients with chronic DMO (≥3 years) showed ≥15-letter improvement, compared with 27.8% and 22.3%, respectively in nonchronic DMO patients. Improvement by ≥15 letters at month 36 differed by baseline acuity in chronic and nonchronic DMO patients. Among sham-treated patients with baseline BCVA ≤20/64, 14.4% with chronic DMO and 32.7% with nonchronic DMO experienced ≥15-letter improvement. For those with ≥20/80 baseline BVCA these values were 12.7% and 42.4%, and those for ≥20/100 were 12.5% and 50.0%, respectively.

The percentage of patients achieving ≥20/40 decreased with worsening baseline BCVA to a numerically greater extent in sham-treated patients with chronic DMO (≤20/64, 17.8%, ≤20/80, 7.9% ≤20/100, 6.3%) than in 0.2 µg/d FAc-treated chronic DMO patients (≤20/64, 31.1%, ≤20/80, 24.2% ≤20/100, 17.8%).

Conclusion: Although group sizes are small, these results support corticosteroid therapy in patients with chronic DMO, irrespective of baseline visual acuity.

DVDs

1. Removal of artificial iris implants due to bilateral angle closure glaucoma and corneal decompensation

Sarmi Malik, Abdul-Jabar Ghauri, Rosemary Robinson, George Smith
University Hospital, Coventry

Introduction: We describe the management of a patient, who presented to eye casualty with bilateral angle closure. He had undergone cosmetic artificial iris insertion to both eyes two years ago. His original brown irides were visible beneath the artificial blue ones and appeared to be fixed. The implants were rubbing on the corneal endothelium. Both eyes had closed angles. His left eye had no perception of light. He was initially treated medically for raised intraocular pressure. After the pressures were controlled, he was listed for surgical removal of the artificial irides.

Purpose: We describe the surgical removal of the artificial iris implants.

Method: A superior corneal incision and an inferior port were made. Viscodissection of the artificial iris was done using viscoat between the iris implant and the natural iris. The implant was cut in half, using vitreoretinal scissors. It then curled on itself and could be removed using fine forceps, through the superior incision. This procedure was performed in both eyes.

Results: The right eye has normal vision, full field and healthy optic disc, on one glaucoma medication.

The left eye has advanced glaucoma and corneal decompensation. Unfortunately, this eye did not regain vision. He has had cyclodiode laser to this eye to keep it comfortable. His pressure is controlled on two antiglaucoma agents.

Conclusion: Artificial iris implants are only recommended for medical reasons, such as aniridia. They are not approved for cosmetic purposes.

2. A novel technique for removal of migrated Iluvien implant into the Anterior Chamber

Ibraheem El-Ghrably
James Cook University Hospital

Introduction: Fluocinolone acetonide intravitreal insert (Iluvien)has been approved in UK for the treatment of diabetic macula oedema.It is inserted into the vitreous cavity through a 25-gauge needle.

Migration of the implant to the Anterior chamber can occur through gaps in posterior capsule especially in vitrectomised eyes.Early removal of AC dislocated Iluevien implants is essential to prevent corneal oedema and damage from raised intraocular pressur.

Purpose: To demonstrate a simple technique for removal of Anterior chamber migrated Iluvien implant and reinsertion into vitreous cavity without compromising implant integrity

Method: A side port incision was created with a keratome and an anterior chamber maintainer introduced and secured. Subsequently, a corneal incision was created at 12 o'clock through which a 23gauge backflush needle (flute needle) was advanced into the anterior chamber and passive suction used to secure the implant. The flute needle was then placed through the defect in the posterior capsule and the exit port blocked, causing loss of suction and allowing the implant to fall into the posterior segment. The sulcus IOL was centralised simply by manipulating it approximately 180 degrees to provide adequate anterior capsule support

Results: The Iluvien implant was successfully removed from AC in two patients and reinserted into the vitreous cavity without damage or complications either for the eye or the implant. IOL in both patients were repositioned to close the gap in posterior capsule. implants remaind in vitrous cavity after surgery.

Conclusion: Using 23g flute needle to retrieve dislocated Iluvien implant is a safe and easy technique.

3. "Radial Reading": a novel way to read despite absence of central vision

David Colin Mansfield
Inverclyde Royal Hosptal

Introduction: Everyone assumes that central retinal function is the pre-requisite for reading. I have invented a new script which is to be read by peripheral retina. It is applicable to every alphabet in the world.

Purpose: This DVD introduces the concept of spelling using peripheral visual symbols, and then demonstrates how this is modified so that reading may be fast, fluent and effortless despite the absence of any central retina. This method of reading might be invaluable for people with severe macular dystrophies.

Method: "Radial Reading" uses, in place of a conventional alphabet, simple radial lines in peripheral visual field. Letters, numbers, symbols and punctuation are all denoted by this means, and are identified in succession. Radially placed symbols can be viewed simultaneously to denote syllables and words. The reader needs neither to keep their eyes steady, nor to change the direction of gaze.

Results: I show that various forms of hardware are suitable for "radial reading": examples include light-emitting diodes around a modified spectacle frame, smart phone screens and tablet computer screens, or projection onto the retina by a wide-field equivalent of the "Google Glass". For any of these devices, software converts binary computer code into radial symbols.

Conclusion: With this substitute script, the low spatial resolution offered by peripheral retina is adequate for reading all forms of written communication, in any language that uses an alphabet. It might be most helpful for deaf people unable to use text-to-audio devices.

4. Thiel - The "Real Deal" for Strabismus Surgery Simulation?

Polly Dickerson, James Innes, David Roberts
Hull and East Yorkshire Eye Hospital

Introduction: Unlike traditional embalming, the Thiel method uniquely preserves cadavers without much altering tissue characteristics. Can these cadavers be used to simulate strabismus surgery, while remaining cost-effective for surgical training?

Purpose: We aim to create a simulated training environment in which strabismus surgery can be effectively taught and practised, by transposing existing cadaveric simulation to Thiel bodies.

Method: Five experienced consultants in ocular motility surgery will recreate the regional compulsory cadaveric strabismus course in the Anatomy Department of Leeds University, using Thiel bodies for the first time in the context of ophthalmic surgery. These facilitators and the 10 ophthalmic specialty trainees attending the course will be asked to complete the existing feedback for comparison with previous courses and to rate the Thiel bodies using an adapted existing scale.

Results: Consensus among non-ophthalmic surgeons published recently has been that Thiel tissue is much more similar to in vivo tissue than embalmed cadavers. Provisional experiences of 2 ophthalmic consultants operating on Thiel bodies in preparation for the strabismus course in January suggests, crucially, that extra-ocular muscle compliance is realistic. Viewers of provisional footage initially believed that it was of surgery in living tissue.

Conclusion: Although surgical training increasingly utilises simulation to improve skills as well as patient safety and experience, a "high-fidelity" simulation for strabismus surgery has until now been lacking. Thiel bodies have the potential to fill this role.

5. Revealing the Hidden- Endoscopic Visualisation in Glaucoma and Anterior Segment Surgery

Achyut Mukherjee, Avinash Kulkarni, Emma Hollick, Sophie Jones, Dan Lindfield, Obeda Kailani
King's College Hospital

Introduction: Intraoperative endoscopy offers a novel and enlightening view of ophthalmic structures, with potential enhancement of a range of procedures.

Purpose: To visually evaluate and review ophthalmic endoscopic technique in anterior segment and glaucoma surgery.

Method: Laser Endocyclophotocoagulation (ECP) & and endoscopic goniosynaecholysis were performed, and compared to conventional techniques. The role of the intraoperative endoscope for visualisation during iris and scleral intraocular lens fixation was evaluated versus blind techniques.

Results: Video of the scope and technique of endoscopic cyclophotocoagulation are presented. The utility and advantages of endoscopic visualisation in other surgical settings are reviewed.

Conclusion: Endoscopic techniques offer improved visualisation in several surgical procedures. The technique enhances our knowledge of operative anterior segment anatomy, and offers a revealing view of structures otherwise invisible during surgery.

6. Phaco-ECP: Observations from Five Years of Clinical Practice

Huw Oliphant, Line Langsaeter, Pieter Gouws
Conquest Hospital

Introduction: Cataract surgery with combined endo-cyclophotocoagulation (phaco-ECP) remains a relatively new procedure for both generalists and glaucoma specialists. Studies have demonstrated it to be a safe and effective way of controlling intraocular pressure (IOP), although there is a learning curve involved. The technique also allows unprecedented views of intraocular structures.

Purpose: The purpose of this DVD is to demonstrate how phaco-ECP is undertaken with practical tips in order to enhance the learning curve of others. Additionally we hope to demonstrate rarely seen features from within the eye, with unique views of the intraoperative anatomy.

Method: Phaco-ECP is conducted as routine cataract surgery up until application of the diode laser. Once an intraocular lens has been placed, the side-port is enlarged, and ciliary sulcus inflated to allow passage of the endo-probe. Under observation via a video display unit, the diode laser is directly applied to the ciliary body.

Results: We will demonstrate the technique of phaco-ECP with intrao-operative footage from both standard microscope views, as well intraocular views. We will also demonstrate some of the anatomical variations seen during endoscopic surgery.

Conclusion: Combined phaco-ECP can be seen as value added cataract surgery, but like many other procedures has a distinct learning curve. We hope to convey how the procedure is undertaken, and to demonstrate practical tips to increase success. We also hope to demonstrate the fascinating and unprecedented views that endoscopic surgery allows.

7. Key steps in Repair of Traumatic LASIK flap Dehiscence

Fiona Jazayeri, David Anderson
University Hospital Southampton NHS Foundation Trust

Introduction: LASIK remains an extremely popular refractive procedure, and patients who suffer a traumatic flap dehiscence may present to the NHS for treatment rather than to a refractive surgeon.

Purpose: This instructional video shows the following key steps, which are important to follow during the repositioning of a folded LASIK flap following trauma.

Method:

1. Identify the folded edge of the LASIK flap.
2. Remove the visible epithelium from the flap edge.
3. Lift the LASIK flap.
4. Remove the epithelium from the stromal bed interface. Apply 20% alcohol to the stromal bed followed by irrigation with balanced salt solution (BSS). This is important to prevent epithelial down growth under the LASIK flap.
5. Irrigate the stromal bed and LASIK flap with Cefuroxime.
6. Stretch and reposition the swolllen LASIK flap, while taking care to minimise any folds.

Results: This instructional video will demonstrate the key steps on how to safely reposition a LASIK flap, demonstrating how to minimise the possible complications of epithelial down growth and LASIK flap folds.

Conclusion: This instructional video demonstrates a useful technique for ophthalmologists practising in the NHS setting to have, and which may be difficult to acquire outside of the private refractive practice setting.

The ROYAL COLLEGE of OPHTHALMOLOGISTS

Seminar Calendar 2015

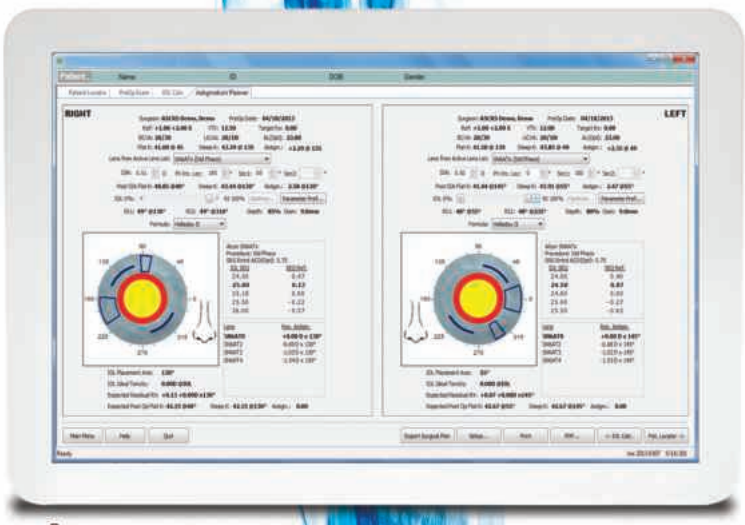
THURSDAY 4 JUNE & FRIDAY 5 JUNE	SKILLS IN RETINAL IMAGING, DIAGNOSIS AND THERAPY Chairs: Professor Heinrich Heimann & Mr Yit Yang Venue: The Royal College of General Practitioners, London
MONDAY 15 JUNE	PRIMARY CARE OPHTHALMOLOGY Chair: Miss Stella Hornby Venue: The Royal College of Ophthalmologists, London
TUESDAY 23 JUNE	LASER TREATMENT IN GLAUCOMA Chair: Professor Stephen Vernon Venue: The Royal College of Ophthalmologists, London
FRIDAY 3 JULY	DELIVERING BEST CARE THROUGH RESEARCH Chairs: Mr Praveen Patel and Miss Clare Bailey Venue: The Royal College of Ophthalmologists, London
FRIDAY 18 SEPTEMBER	PRACTICAL NEURO-OPHTHALMOLOGY Chair: Miss Margaret Dayan Venue: Newcastle Civic Centre
FRIDAY 25 SEPTEMBER	GLAUCOMA SURGERY: BALANCING SAFETY AND SUCCESS Chair: Mr Nicholas Strouthidis Venue: The Royal College of Ophthalmologists, London
WEDNESDAY 14 OCTOBER	NON-ACCIDENTAL INJURY Chair: Mr William Newman Venue: The Royal College of Ophthalmologists, London
THURSDAY 15 OCTOBER	SEVEN STEPS TO SUSTAINABLE EYE CARE SERVICES Chair: Mr Andrew Cassels-Brown Venue: The Royal College of Ophthalmologists
WEDNESDAY 4 NOVEMBER	NEW CONSULTANTS Chairs: Mr Mike Burdon & Professor Peter Shah Venue: The Royal College of Ophthalmologists, London
WEDNESDAY 4 NOVEMBER	ULTRASOUND Chair: Mr Hatem Atta Venue: The Royal College of Ophthalmologists, London
MONDAY 23 NOVEMBER	PRIMARY CARE OPHTHALMOLOGY Chair: Miss Stella Hornby Venue: Malmaison Hotel, Leeds
WEDNESDAY 25 NOVEMBER	CLINICAL LEADS FORUM Chair: Mr Richard Harrad Venue: The Royal College of Ophthalmologists, London
FRIDAY 4 DECEMBER	ELIZABETH THOMAS SEMINAR FOR MACULAR DISEASE Chair: Mr Winfried Amoaku Venue: East Midlands Conference Centre, Nottingham

Seminars are held at the new College premises opened by HRH the Duke of York, KG in March 2015.

VISIT THE WEBSITE FOR PROGRAMMES, INFORMATION AND REGISTRATION
WWW.RCOPHTH.AC.UK/EVENTS-AND-COURSES
OR CONTACT US AT EVENTS@RCOPHTH.AC.UK OR TELEPHONE 020 7935 0702

Pre-op

Image.



Pre-op

Plan.

Intra-op

Guide.

Introducing the new VERION™ Image Guided System*: Designed to help you consistently hit your refractive target.

EXPERIENCE THE VERION™ IMAGE GUIDED SYSTEM AT THE ALCON BOOTH.

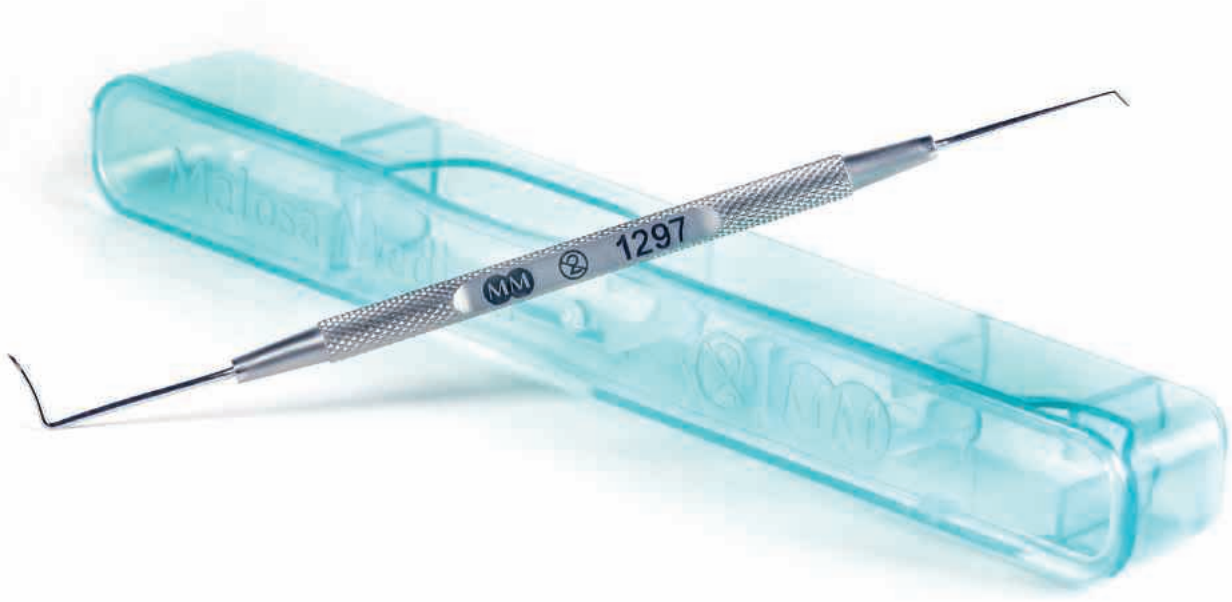
Alcon
a Novartis company

VERION™
IMAGE GUIDED SYSTEM
THE CATARACT REFRACTIVE SUITE BY ALCON

Preparation Date: UK-VER150021 March 2015

*The VERION™ Image Guided System is composed of the VERION™ Reference Unit and the VERION™ Digital Marker.

Innovation®



Ophthalmology is changing.

Advances in understanding.

Innovations in patient safety, technology and technique.

Malosa work alongside surgeons from throughout the ophthalmic profession.

Developing instruments to enable the procedures of the future.

We believe the future of ophthalmology is single-use.

That's the reason we develop over one hundred single-use products each year for pioneering procedures such as ReLEx, DSAEK & Femto-Phaco.

So, whatever advances lie ahead, we remain at the cutting edge.

Malosa Medical

+44 (0) 870 3000 555
www.malosa.com