Irish College of Ophthalmologists

Eye Doctors of Ireland, protecting your vision

IRISH COLLEGE

OF

OPHTHALMOLOGISTS

YEARBOOK

2012-2013

Incorporating the Scientific Programme for the

Annual Meeting in the Malton Hotel, Killarney
Wednesday 29th – Friday 31st May, 2013

TABLE OF CONTENTS

IRISH COLLEGE OF OPHTHALMOLOGISTS
121 St. Stephens Green, Dublin 2.
Tel: + 353-1-402 2777 & +353-1-402 8535
Fax: + 353-1-402 2778
www.eyedoctors.ie
ico@rcsi.ie

COUNCIL 2012/2013

President: Patricia Logan
Vice President: Paul Moriarty, *President Elect:* Marie Hickey - Dwyer
Secretary: Patricia Quinlan, *Treasurer:* Mark Cahill, *Dean*: Denise Curtin
Members of Council
Paddy Condon, Paul Connell, Noel Horgan, David Keegan, Catherine McCrann, Margaret Morgan, Margaret Pierse, Paul O Brien, Philip O Reilly, Garry Treacy

STANDING COMMITTEES:

Medical Eye Specialists Committee
Chairman: Catherine McCrann
Members: Paddy Condon, Collette Dalton, Tim Horgan, Marie Houlihan, Fiona Kearns, Bernadette McCarthy, Margaret Morgan, Susan Mullaney, Margaret Pierse, Grace O' Malley and Garry Treacy

Finance, Policy and Professional Standards Committee
Chairman: Mark Cahill
Members: Honorary Officers

Manpower, Education and Training Committee
Chairman: Noel Horgan
Members: Alison Blake, Denise Curtin, Yvonne Delaney, Gerry Fahy, Tim Fulcher, Sinead Fenton, Marie Hickey-Dwyer, Tim Horgan, Patricia Logan, Paul Moriarty, Mark Mulhern, Conor Murphy, and Shauna Quinn

Scientific Committee
Chairman: Paul O Brien
Members: Patricia Logan, Stephen Beatty, Fiona Kearns and Denise Curtin

Public Affairs Committee
Chairman; Mark Cahill
Members: Mark Cahill, Paddy Condon, Alison Blake, Pat Logan, Darragh O Doherty, Kathryn McCreery, Gary Treacy,

Professional Competence Committee
Chairman; Noel Horgan
Susan Mullaney, Aideen Hogan, Paul O Brien

LETTER FROM THE PRESIDENT

Dear Fellow College Members

I am delighted to welcome you all to our Annual Conference. It has been a busy year for the College since the celebration of our 21st Anniversary in May 2012. Our College Committees continue to work hard and I would like to take this opportunity to thank all of the committee members on our behalf. A special word of thanks to the Committee Chairs, these roles take a considerable, and often unacknowledged, commitment and the efforts to grow the College's influence would not be possible without this work. I encourage all of you, particularly our younger colleagues, to become active members in the Committee structure which is shaping the future of the specialty.

A word of thanks to our colleagues who have represented the College overseas including Louise O Toole at the Royal College in London, Denise Curtin & Alison Blake at the UEMS and Gerard O Connor at the EBO. Thanks also to all of those who examined at the EBO in Paris in May and congratulations to the 13 Irish candidates who were successful in that exam.

I would like thank Philip Cleary for his contribution to the SOE as the Irish Representative. Philip's term is drawing to a close and I am looking forward to continuing this connection with our European colleagues. Thank you to Pat McGettrick for her years of service as the surgical simulator tutor. Pat is standing down from this role in June and has been a wonderful guide to trainees over the past number of years. Many thanks also to Siobhan, Marian & Ciara in the College office.

My term as President concludes at this year's AGM. It has been an honour to lead the College over the past two years. I wish Marie Hickey Dwyer every success as she takes over this role and I wish you all continued success for the future.

With Best Wishes

Pat Logan
President
Irish College of Ophthalmologists

May 2013

REPORT OF COUNCIL 2012-2013

Patricia Quinlan, *Honorary Secretary*

There have been four Council meetings: May 25th 2012, September 22nd 2012, February 2nd 2013, April 27th 2013.

The Council Members are

Patricia Logan, Paul Moriarty, Marie Hickey – Dwyer, Patricia Quinlan, Mark Cahill, Paddy Condon, Paul Connell, Denise Curtin, Noel Horgan, David Keegan, Catherine McCrann, Margaret Morgan, Paul O Brien, Philip O Reilly, Garry Treacy

All Council members have attended the minimum required number of meetings

Changes in Council Membership
The Council terms of Noel Horgan, Catherine McCrann and Garry Treacy have concluded. On behalf of all College members I would like to thank each of them for their contribution to Council and in particular for their commitment to the College Committees.

The new appointments to Council will be announced at the AGM.

EGM February 1st
An Extraordinary General Meeting of the College was held on Friday February 1st which was very well attended.

The following motions were agreed:
1. The Irish College of Ophthalmologists agrees that an Ethics Sub Committee, of the Public Affairs Committee, should be formed immediately to set standards and guidelines on practice.

The development of the Ethics Committee is being progressed through the Council.

2. The Irish College of Ophthalmologists agrees that it should be kept up-to-date on referral pathways for diabetic retinopathy screening by the HSE/National Cancer Screening Service, that people called for screening should have an option to opt-out or be screened by their own doctor or choose to be referred back to their own doctor for follow up treatment if required.

Members agreed that the results letter which is sent to patients following their screening should include that they have the option of being seen by their own eye doctor.

It was agreed that the nationally funded treatment programme will benefit patients and that it should be supported but that another College meeting may be necessary to discuss the issue in more detail. *A further discussion will take place during this year's conference.*

3. The Irish College of Ophthalmologists agrees that appropriately trained allied health professionals should be incorporated into the community ophthalmic service under the supervision of the eye doctor to improve access for patients, particularly with respect to the children's screening service.

Members agreed that optometrists and other appropriately trained AHPs, including technicians, should be included in the HSE managed service in the community as well as the hospitals, under the supervision of the eye doctors and employed at a sessional rate not fee per item.

4. The Irish College of Ophthalmologists agrees that the national roll out of the Community Ophthalmic Medical Treatment Scheme (COSMTS) should be supported as

a positive step towards improved patient access.

Members agreed that the College must advocate for the role-out of the Community Ophthalmic Services Medical Treatment Scheme to all eligible eye doctors.

5. The Irish College of Ophthalmologists agrees it will continue to promote the central role of the eye doctor within the community and will continue to advocate on behalf of patients to make certain that the highest standards of care are maintained by ensuring that medical treatment is not provided by unsupervised non-medical eye care practitioners.

Members agreed that the College must to continue to advocate on the central role of eye doctors in the community.

6. The Irish College of Ophthalmologists agrees that the provision of medical eye care treatment and eye care must be focused on best likely patient outcome and not determined solely by commercial considerations.

Members agreed that the College must continue to articulate concerns about the marketing and advertising of medical treatments and ensure that decisions on care are made based on best likely outcome.

FINANCE, POLICY AND PROFESSIONAL STANDARDS COMMITTEE

Mark Cahill, *Treasurer*

At the close of 2012, the membership for the Irish College of Ophthalmologists stood at 180, subdivided into the following four categories of membership:

Ordinary Members;	132
Affiliate Members;	4
Overseas Members;	9
Senior Members;	15
Life Members;	19
Hon Life Members;	1
Total;	**180**

Membership Fees

The membership fees for the Irish College of Ophthalmologists for 2013 remained unchanged.

Ordinary members	€480.00
Affiliate members	€360.00
Overseas members	€200.00
Senior members	€160.00

The full audited accounts for the year ended 31st December 2012 will be available for discussion at the AGM.

The ICO is a company limited by guarantee and the current Directors are: Patricia Logan, Philip Cleary, Marie Hickey Dwyer and Paul Moriarty.

Funding for provision of Specialist Training

There are 65 ophthalmic NCHDs of which 52 were in structured training programmes at the end of 2012.

The HSE Medical Education & Training Unit committed to providing up to €220,700 in training grants to the College for the period July 2012- June 2013 to fund the provision of specialist training and associated costs. This funding is claimed retrospectively by the College based on vouched expenses incurred.

MANPOWER, EDUCATION & RESEARCH COMMITTEE

Noel Horgan, *Chairman*

Committee Members: Alison Blake, Denise Curtin, Yvonne Delaney, Gerry Fahy, Tim Fulcher, Sinead Fenton, Marie Hickey-Dwyer, Tim Horgan, Patricia Logan, Paul Moriarty, Mark Mulhern, Conor Murphy, and Shauna Quinn

The committee met on three occasions in 2012-13; October 13th, January 12th, April 4th.

Specialty Training in Ophthalmology
The ICO has made a submission to the Medical Council for reaccreditation as the training body with responsibility for postgraduate training in ophthalmology. Sincere thanks especially to Dr Denise Curtin, Ms Yvonne Delaney and Ms Siobhan Kelly for their continued hard work on this process.

From July 2013, new trainees appointed to the ICO training scheme will undertake a structured 4-year training programme, leading to the specialist qualification as an ophthalmologist. It is hope that the 4th year of the programme can be tailored to individual trainees' specialist interests, in particular with greater emphasis on community aspects of ophthalmology practice.

Specialty Training in Ophthalmic Surgery
Specialty training in ophthalmic surgery, under the direction of the RCSI, remains a 5-year training programme, leading to specialist registration in ophthalmic surgery. The final 6 or 12 months of training may be spent undertaking a recognised fellowship in Ireland or overseas.

It is anticipated that the next round of interviews for the training scheme in ophthalmic surgery will take place in autumn 2013. Applicants will require a 'certificate of eligibility for application to ophthalmic surgery training' (CEAOST).

This comprises of the following –
Minimum of 4 successful CAPA appraisals
MRCSI Ophthalmology
Satisfactory attendance at ICO mandatory trainee courses
Minimum of 50 completed cases of phacoemulsification cataract surgery
Minimum of 25 other surgical procedures (excluding laser procedures)

Intending applicants should contact the ICO office to request a CEAOST and should contact the training office in the RCSI in regard to application guidelines etc.
Sincere thanks to the trainee representatives who have attended the committee meetings and conveyed valuable information regarding trainees' training experience, concerns and suggestions. This is essential to allow the College to respond positively to trainees' needs.

Thanks also to all the committee members who have made themselves available for committee meetings and appraisals, which are essential in the delivery of the training scheme.

May I wish Mr Paul Connell every success as he takes over as chairman of the Manpower, Education and Research Committee.

SCIENTIFIC COMMITTEE

Paul O Brien, *Chairman*

Committee Members; Denise Curtin, Fiona Kearns, Stephen Beatty, Patricia Logan

Last year's annual conference was held in the RDS on Thursday 24th & Friday 25th May. The meeting was followed on Saturday 26th & Sunday 27th by the annual meeting of the European Association for the Study of Diabetes, Eye Complications Group which was hosted by the ICO.

ICO/Novartis Research Bursary
The ICO is delighted to have been able to secure the support of Novartis for the annual research bursary. The application process was run throughout this spring and the recipient will be announced at this year's conference. Thank you to Pat Logan, Colm O Brien, Louis Collum, Marie Hickey Dwyer, David Henshall from the RCSI and Clodagh Brennock, Novartis who assisted with the short listing and interview of applicants.

ICO Medals
Dr Pathma Ramasamay was the winner of the Barbara Knox medal at the 2012 Conference for his paper on Proteomic Research in Uveal Melanoma.

The winner of the Sir William Wilde Medal was Dr Lisa McAnena for her poster on Childhood Craniopharyngiomas; the Irish Experience.

Thanks to support from Sean Mockett in Sedena Lisa and Pathma attended a meeting of the New England Ophthalmic Society earlier in May to present their medal winning papers.

Montgomery Lecture
The 2012 Montgomery Lecture was delivered by Gerrit Melles on February 1st in the Albert Theatre, RCSI. Dr Melles had been due to give the lecture on December 7th but due to sudden poor weather conditions at Schiphol airport his flight was cancelled, as was the lecture at late notice.

Dr Melles, Director at the Netherlands Institute for Innovative Ocular Surgery spoke on Endothelial keratoplasty: DMEK or DMET - what if Fuchs endothelial dystrophy does not exist?

The lecture was attended, amongst others by Mr Paddy Broe, President of the RCSI.

Professor Nancy Newman, LeoDelle Jolley Professor of Ophthalmology at Emory University in the US, will give the 2013 Montgomery Lecture in the Autumn.

Mooney Lecture
The 2012 Mooney lecture on 'Retinal Oximetry in Health & Disease' was delivered by Prof Einar Steffanson from the University of Iceland.

This year's Mooney Lecture will be given by Gordon Plant, Neurologist at Moorfields Hospital in London on 'Trans-synaptic Degeneration in the Human Visual System'.

MEDICAL OPHTHALMOLOGISTS COMMITTEE

Catherine McCrann, *Chairperson*

Committee Members: Paddy Condon, Collette Dalton, Tim Hogan, Marie Houlihan, Fiona Kearns, Margaret Morgan, Susan Mullaney, Bernadette McCarthy, Grace O`Malley ,Margaret Pierse, John Traynor and Garry Tracey.

The committee had three meetings during the year which were well attended. Committee members also attended the Innovations in Health Care meeting and the College EGM.

College Committees
Committee members represent medical ophthalmology on the other College committees; Garry Treacy on the Public Affairs Committee, Fiona Kearns on the Scientific Committee, Tim Horgan on the Manpower and Training Committee and Susan Mullaney on the Professional competence committee.

Clinical Programme for Eye Care
Garry Treacy & I sit on the Steering Committee for the Clinical programme for Eye Care. The year has been dominated by discussion on proposed changes to provision of eye care nationally with increased eye care provided in community. This has far reaching implications for medical ophthalmology affecting clinical governance, speciality training, Community Ophthalmic Physicians contracts and integration with regional surgical units and allied health professionals. The eye care pathways will be finalised soon and will be discussed at annual general meeting. Provision and training for consultant medical ophthalmology posts remains an issue

The Community Ophthalmic Services Medical Treatment Scheme has now been approved by college at EGM but remains with restricted access for independent ophthalmologists.

I would like to thank Siobhan for her support and all members of committee for their commitment during the year.

PUBLIC AFFAIRS COMMITTEE

Mark Cahill, *Chairman*

Committee members; Alison Blake, Pat Logan, Garry Treacy, Kathryn McCreery, Paddy Condon and Darragh O Doherty.

The Committee has met continuously over the past 12 months.

Ongoing Advocacy and Public Awareness Work

The Committee is continuing to actively advocate on behalf of the specialty and patients and to raise public awareness on the work of eye doctors. Ongoing contact both direct and indirect, is being maintained with the Department of Health & Children.

Ciara Keenan is working for the College on a part time basis to develop public awareness and to capitalise on opportunities for the College in various health awareness campaigns. A public health session is being held to coincide with the Annual Meeting, together with an event for local General Practitioners.

The Innovations in Eye Care conference in December provided an opportunity to engage with Department and other officials on eyecare. The report from the meeting will be available during the annual conference.

The College has been an active partner in the National Coalition for Vision Health in Ireland and is engaging with the AOI and the patient advocacy groups.

We have also corresponded with the Optician's Board on several matters, in particular with regards to inappropriate advertising and published articles.

PROFESSIONAL COMPETENCE COMMITTEE

Noel Horgan, *Chairman*

Committee Members: Aideen Hogan, Susan Mullaney and Paul O Brien

Since May 1st, 2011, all medical practitioners registered with the Medical Council have been legally obliged to participate in an approved professional competence scheme (PCS). The second year of mandatory participation in PCS has recently concluded.

The Post Graduate Training Bodies, including the ICO, are required to undertake a verification audit on 3% of the doctors enrolled on the scheme. 3% of those enrolled on the ICO scheme were randomly selected for this verification audit for year 1 of the scheme and this process will be repeated annually selecting a different 35.

The verification process involves the College reviewing the points logged by the chosen doctors to ensure that the information is validated.

A small number of doctors are asked annually by the Medical Council, to produce evidence of enrolment and a summary of the CME points recorded. This e-certificate is available online in your PCS account to download and print off to send to the Medical Council if requested.

The enrolment fee has been reduced to €100, with a further €50 reduction in the annual subscription given to those who have renewed their PCS enrolment by January 1st.

The College is keen to support and facilitate members as much as possible in meeting their obligations so if you require any information we are happy to help.

The Council and Members of the Irish College of Ophthalmologists appreciate the support of the following companies for College activities:

Alcon
Allergan
Ash Low Vision
Aurelia Clinic
John Bannon & Co.
Bayer
Bausch & Lomb
Clarendon Medical
DORC
Eurosurgical
Fannin Healthcare
Grafton Optical
Haag-Streit
Hospital Services
KD Surgical
MEDA
MED Surgical
Merck Sharp & Dohme
Novartis
Pfizer
Raynor
Sedena
Sigmacon
Topcon
Whelehan Surgicare
WMO Healthcare

ICO Annual Conference Programme
Malton Hotel Killarney
Wednesday 29th – Friday 31st May, 2013

DAY 1 WEDNESDAY 29TH MAY

8.45am — President's Welcome
Patricia Logan
President,
Irish College of Ophthalmologists

8.50am — Paper Session
Chair: William Power
Royal Victoria Eye & Ear Hospital, Dublin

8.50am — Digitizing Clinical Examination with Smart Phone Using An Adaptor
P Lee

8.55am — Preoperative Lymphopaenia and Surgical Outcomes in Uveitis
N Collins

9.00am — Long-Term Follow-Up of "Bag-in-the-Lens (BIL)" Paediatric Cataract Surgery
S Ni Dhubhghaill

9.05am — An Audit of the Post-Operative Refractive Results Following Cataract Surgery Over a One Year Period in the Ophthalmic Department of Sligo Regional Hospital
MC Tay

9.10am — Has the Age Profile of Cataract Surgery Really Changed in the Past 10 Years?
R Tevlin

9.15am — Intraocular Telescope Surgery in End-Stage ARMD (Case Series)
K Stephenson

Q&A

9.25am	Outcomes of Corneal Transplantation in Irish patients with Congenital Hereditary Endothelial Dystrophy (CHED) *H Alarrayedh*
9.30am	Screening Procedures and Surgical management of Keratoconus in a European Ophthalmic Practice *P Condon*
Q&A	
9.40am	Six-month Follow-up of a New Intracorneal Inlay for the Treatment of Presbyopia *C Baily*
9.45am	Long Term Efficacy and Safety of Refractive Surgery in Patients with Accommodative and Non-Accommodative Strabismus *S Farrell*
9.50am	Outcomes of Supracor LASIK Algorithim in Presbyopic Hyperopes *S Moran*
Q&A	
10.05am	The Dublin Uveitis Evaluation Tool (DUET) – an Algorithm for Earlier Diagnosis of Spondyloarthropathies by Ophthalmologists in Acute Anterior Uveitis *M O Rourke*
10.10am	Audit of After-Hours Work Requirement of the Senior House Officer after 5pm and its Implications on Compliance with the EWTD *M Feyzrakhmanova*
10.30am	Keynote Lecture **The Start of a National Screening Programme for Diabetic Retinopathy** *Diarmuid Smith,* *Endocrinologist Beaumont Hospital, HSE National Clinical lead for Diabetes*
11.00am	Refreshments

11.30am Plastics Symposium
Chair - Tim Fulcher
Mater Hospital, Dublin

Clinical Evaluation of Orbital Disorders
Paul Moriarty
Royal Victoria Eye & Ear Hospital, Dublin

Orbital Vascular Anomalies
Tim Fulcher

Ocular Adnexal Lymphoproliferative Disorders
Tim Sullivan
Royal Brisbane Hospital, Australia

1.00pm Lunch

2.00pm Trends in Ophthalmology
Chair: Paul O Brien
Royal Victoria Eye & Ear Hospital, Dublin

The Role of Intravitreal Ozurdex in the Management of Posterior Uveitis that is Refractory to Multiple Immunosuppressive Agents
Conor Murphy
Royal Victoria Eye & Ear Hospital, Dublin

The Place of IgG4 Related Orbital Disease in Orbital Inflammation
Tim Sullivan
Royal Brisbane Hospital, Australia

Repair of Torn / Lacerated Canaliculi and Porous Orbital Implants
Gerry Fahy
University Hospital Galway

Update on Glaucoma Stents and Devices
Colm O Brien
Mater Hospital Dublin

Followed by Q&A

3.30pm Refreshments

4.00pm Announcement of Recipient of ICO/Novartis Research Bursary 2013-14
Paul O Brien,
Chair, ICO Scientific Committee

4.10pm New Treatments in Medicine: Are they Worth it?
Chair – Paddy Condon,
Waterford Eye Specialists

The Cost of Blindness
David Keegan
Mater Hospital Dublin

Anti Veg-F Treatments – Are they worth the Cost?
Dara Kilmartin
Royal Victoria Eye & Ear Hospital, Dublin

DAY 2: THURSDAY 30TH MAY

8.30am — Paper Session
Chair: Tim Sullivan,
Royal Brisbane Hospital, Australia

8.30am — The Retinal Pigment Epithelial Cell and Peripapillary Atrophy: Potential Mediators of Glaucomatous Optic Disc Cupping?
E Hughes

8.35am — An Analysis of Normal and Glaucomatous Human Lamina Cribrosa and Trabecular Meshwork Cell Behaviours as Determined by the Surrounding Extracellular Matrix
S McNally

8.40am — Proteomic Analysis of Uveal Melanoma
P Ramasamay

8.45am — Identifying New Targets of Viral Regulatory protein ICP0 in Herpes Simplex Viris Type-1 (HSV-1) Keratitis
D Shahnazaryan

8.50am — Five Year Outcomes of Deep Sclerectomy, Trabeculectomy and Phaco-Trabeculectomy in the Royal Victoria Eye and Ear Hospital
E Dervan

Q&A

9.00am — Treatment Outcomes of Ahmed Valve Implantation for Uveitic Glaucoma in a Tertiary Uveitis Referral Centre
M McGuire

9.05am — A 15 Year Audit of Filtering Glaucoma Surgery Performed in the Mater Hospital between 1998 and 2012
D Thacoor

Q&A

9.10am — Evaluation of Pain Perception Among Diabetic Retinopathy Patients Undergoing Pan Retinal Laser Photocoagulation
H Dyer

9.15am A Review of Paediatric Retinal Detachment at a Tertiary Referral Unit in Ireland 2008 – 2011
S Gilmore

9.20am Outcome of Retinal Detachment Surgery Using Subretinal Trypan Blue for the Identification of Retinal Breaks
S Manning

Q&A

9.30am Corneal Collagen Crosslinking at the RVEEH; a three-year Audit
L McAnena

9.35am Perplexing Orbital Inflammatory Masses
R Tevlin

9.40am Review of Frontalis Suspension Procedures in Our Lady's Children Hospital
C Hartnett

9.45am Retrospective Study on the Outcomes of Patients with Periocular Skin Tumours who had Moh's Micrographic Excision by a Dermatologist and Reconstruction by Oculoplastic Surgeons
M Treacy

Q&A

10.00am <u>Neuro-Ophthalmology Symposium</u>
Chair: Patricia Logan
Mater & Beaumont Hospitals Dublin

Practical Papillodema
Michael Burdon
Neuro-Ophthalmologist,
University Hospital Birmingham

Optic Neuritis: MS or not-MS
Gordon Plant
Neurologist, Moorfields, London

Idiopathic Intracranial Hypertension
Michael Burdon

11.30am Refreshments

12.00pm ICO Annual General Meeting

1.30pm Lunch

2.30pm Workshops
National Diabetic Retinopathy Screening Programme
Chair: Margaret Morgan,
Clinical Lead of the National Screening for Diabetic Retinopathy

3.30pm **OCT & Retinal Imaging**
Paul Connell, Mater Hospital
Brid Morris, Mater & James Connolly Hospitals

Trainee Workshop - Principles of Safe Phacoemulsification Surgery – *Princeton Lee, Royal Victoria Eye & Ear Hospital*

7.15pm Annual Mooney Lecture
'Trans-synaptic Degeneration in the Human Visual System'
Gordon Plant
Neurologist, Moorfields Hospital, London

Day 3: FRIDAY 31ST MAY

8.30am	Poster Session *Chair: Alison Blake* *Cavan General Hospital*
8.30am	To Evaluate Endothelial Cell Count Loss after Five Years Following Phakic Intraocular Lens Insertion *C Baily*
8.33am	Mud in Your Eye? Infectious Endophthalmitis after Intravitreal Injection: 4-Year Experience at a Tertiary Referral Eye Hospital *N Collins*
8.36am	Through the Eyes of a Child- A Review of Paediatric Ophthalmic Referrals in the Mid-West *T Droney*
8.39am	Sports- Related Retinal Trauma; Is There More to the Story? *E Duignan*
8.42am	Optimisation of Pain Management in Anti-angiogenic Intravitreal Injection of Patients with Age Related Macular Degeneration *H Dyer*
8.45am	Analysis of Retinal Vessels' Diameters in Patients with Alzheimer's Dementia *H Dyer*
8.48am	Unexplained No perception of Light Following Intravitreal Anti_VEGF Injection *F Fauzi*
8.51am	A Clinical Audit of Conjunctival Melanoma in the Royal Victoria Eye and Ear Hospital *R Goetz*
8.54am	Review of All Irish Intracranial Germinoma Cases from 1982 - 2012 *C Hartnett*

8.57am Long Term Follow Up of Newborns with Hypoxic Ischaemic Encephalopathy; Biometric and Refractive Data in Early Childhood
M James

9.03am Recruitment of Bone Marrow-Derived Stem Cells to the Retinal Pigment Epithelium after Laser Injury
D Kent

9.06am The Effectiveness of Phaecomulsification Training Using Dry Lab Methodology
P Lee

9.09am Orbital T-Cell Lymphoma; a Case Report
L McAnena

9.12am An Insight into Epigenomics
F McDonnell

9.15am Orbital inflammation following Intravenous Bisphosphonate
M McGuire

9.18am Spontaneous Resolution of Childhood Idiopathic Orbital Inflammatory Disease *M McGuire*

9.21am A Case Series of Ocular Injuries Sustained by Hurling Coaches without Protective Head Wear
O McNally

9.30am Keynote Talk
'Paediatric Orbital Tumours'
Tim Sullivan,
Royal Brisbane Hospital, Australia

10.00am Refreshments

10.30am Symposium: Non Refractive Considerations in Myopia
Chair: David Keegan
Mater Hospital, Dublin

The Epidemiology of Myopia and the Implications for Public Health
Ian Flitcroft
Mater & Temple Street Children's Hospital

Genetic and Environmental Triggers of Myopia
Chris Hammond,
Ophthalmologist, King's College London

The Role of Refractive Error in the Management of Individual Patients
Ian Flitcroft

Posterior Segment Pathology and Management in High Myopia
David Keegan

Panel Discussion

12.30pm Poster Session
Chair: Alison Blake
Cavan General Hospital

12.30am The Bag-in-the-Lens (BIL) Cataract Surgery Approach in Diabetic Retinopathy *S Ni Dhughbhaill*

12.33pm Aberrant MicroRNA Expression in Acute Anterior Uveitis *M O Rourke*

12.36pm Bioinformatic Re-analysis of Gene Expression Microarray Data from Uveal Melanoma *P Ramasamay*

12.39pm A Novel Genetic Mutation for Marfan in a Family with Lens Dislocation P P *Smolarek-Kasprzak*

12.42pm Referral Practice, Presentation and Management of Congenital Nasolacrimal Duct Obstruction in a Single Paediatric Ophthalmology Department *R Tevlin*

12.45pm	Connective Tissue Growth Factor Induction of Lysyl Oxidase (LOX) Enzyme Expression in Human Trabecular Meshwork Cells is reduced by FG-3019 *D Wallace*
12.500pm	Presentation of Medals Best paper – Barbara Knox Medal Best poster – Sir William Wilde Medal
1.00pm	*Conference conclusion*

SOCIAL PROGRAMME

Wednesday 29th May

7.00pm Drinks Reception

7.30pm Special Performance: '

The Wheelchair on my Face'
Written and performed by Sonya Kelly

'I got my first pair of glasses when I was seven. A nurse came to the school and tested everyone's eyes. And so it was discovered why I'd thrown bread to the floating crisp packets in our local pond and walked into lamp posts and said, 'excuse me'. Until that day the world was a swirl of moving coloured blobs. I thought it was the same for everyone. How wrong I was.' - Part memoir, part theatre and part stand-up comedy' this delightful story of a myopic seven year old is brought to you by actor and comedian, Sonya Kelly
The performance is approx 45 minutes so we suggest that you dine afterwards

Thursday 30th May

7.00am	Duathalon 20km cycle & 5 km run Relay teams *Early breakfast will be served*
1.30pm	Killarney Golf & Fishing Club, Killeen course 20 tee times – please reserve your place at the registration desk in the conference centre
2.30pm	Afternoon walk in lakes region Further details available at registration desk in conference centre
8.00pm	Drinks reception
8.30pm	Gala Dinner *Dress code – Black Tie*

EXTRA EVENTS

Tuesday 28th May
Eye Health Information Session for General Practitioners

7pm Malton Hotel
Darragh O'Doherty, Gorey Medical Centre
David Wallace, Bon Secours Hospital, Tralee
Timothy Horgan, Kerry General Hospital, Tralee
John Traynor, Cork

The talks will focus on the most common eye conditions GPs come across and discussions on the conditions which can be treated or managed directly and those which need to be referred on to an eye doctor for specialist care.

Thursday 30th May
Public Information Session on Looking after your Eye Health

7pm Malton Hotel
Alison Blake, Patricia Quinlan and Garry Treacy will talk about:
How to look after your eye health - the important steps for you and your family and the most common eye conditions affecting adults and children in Ireland, including:

- AMD,
- Diabetic Retinopathy,
- Glaucoma,
- Cataracts
- Paediatric eye conditions

Representatives from patient support groups NCBI, Fighting Blindness, ChildVision and Irish Guide Dogs for the Blind will offer advice on the support services available.

Book Of Abstracts

Digitizing Clinical Examination With Smart Phone Using An Adaptor

Lee P.
Royal Victoria Eye and Ear Hospital, Dublin

Objectives: To evaluate the quality of digital image and video taken with smart phones attached to various optical instruments used in ophthalmic clinical examination.

Methods: A purpose-designed adaptor is used to attach smart phones to slit lamps, operating microscopes, YAG and Argon laser machines to capture digital images and videos of eye examination and procedure. The digital file is transferred to computer to assess the usability of the image.

Results: High quality images and video files with audio component of clinical examinations and surgical procedures can be recorded with any smart phones that has good quality camera. The ease of transferring file from a smart phone to a computer via a wire or wi-fi connection allows rapid record keeping.

Conclusions: The optical quality of ophthalmic examination instruments is very high. The lack of build-in camera in most devices prevents digital recording of important clinical information. The widely available smart phones provide a cost effective way of digitizing high quality clinical images and videos for patient care. Images can be used for personalized patient consultation and monitoring of progression.

Preoperative Lymphopaenia and Surgical Outcomes in Iveitis

Collins N, Duignan E, Khalid I, Kilmartin D.
Royal Victoria Eye & Ear Hospital, Dublin

Objectives: To investigate for an effect of preoperative lymphopaenia on surgical outcomes in uveitis – postoperative CMO and inflammatory recurrences at 6 months post-surgery.

Methods: Retrospective review of pre-operative lymphopaenia and post-operative outcomes from vitrectomy in uveitis between 2005 and 2010. Absolute lymphopaenia was defined as an absolute lymphocyte count < 1,000 cells per microlitre; relative lymphopaenia was defined as lymphocytes <= 21% of white blood cells.

Results: 15 patients who underwent vitrectomy for uveitis between 2005 and 2010 were on immunosuppressive treatment preoperatively (corticosteroid and/or another agent). Preoperative lymphocyte count was available for 11 of the 15 patients. 2 of those 11 patients had an absolute lymphopaenia and 8 of 11 patients had a relative lymphopaenia preoperatively. Of the two patients with absolute lymphopaenia, patient 1 was on prednisolone and mycophenolate mofetil and the patient 2 was on hydrocortisone. Patient 1 had one inflammatory recurrence and an increase in CMO at 6 months post-op; patient 2 had no inflammatory recurrences and no CMO at 6 months post-op. Of the 6 patients who had a relative but not absolute lymphopaenia, two patients had inflammatory recurrences, two had reductions in CMO and one had an increase in CMO at 6 months. Of the 3 patients who had lymphocyte counts within the normal range, one had an inflammatory recurrence and one had a reduction in CMO at 6 months post-op.

Conclusions: The majority of patients undergoing vitrectomy for uveitis who were on immunosuppressive treatment exhibited a relative lymphopaenia preoperatively. No definite effect of lymphopaenia was identified in this small sample of patients. Further work is needed on a larger number of cases to identify an effect of preoperative immunosuppression on uveitis outcomes.

Long-Term Follow-Up of "Bag-in-the-Lens (BIL)" Paediatric Cataract Surgery

Ní Dhubhghaill S, Tassignon M-J
University Hospital Antwerp, Wilrijk, Antwerp, Belgium

Objectives: The treatment of cataract in the pediatric population has long been known to pose difficulties beyond that of adult surgery. If the posterior capsule is left intact at the time of surgery, PCO occurs in up to 80% of cases. The "Bag-in-the-lens" (BIL) technique is approach in intraocular lens design that addresses the high risk of VAO. Here we report the long term outcomes of BIL implantation as a primary surgery in the paediatric population

Methods: All pediatric cataract surgeries that were performed using the BIL implant technique between July 1999 and September 2007 were included. All surgeries were performed by a single surgeon. A wide range of cataract types was treated, including nuclear fetal cataract and spherophakia. Forty-six eyes from 31 children completed the full 5-year follow-up period. Sixteen cases were unilateral and fifteen were bilateral.

Results: The follow-up periods ranged from 60 months to 157 months, with a mean follow-up period of 78 months. The age at time of primary surgery ranged from 2 months to 14 years with a mean of 6 years. Fifteen children who underwent bilateral BIL surgery showed significant improvement from a range of baseline of visual acuities of a mean of 0.2 with a range of 0.0 - 0.4 (decimal) to a postoperative mean of 0.83 with a range of 0.2-1.0 . One patient showed no improvement and no patient showed a worsening of vision. Visual acuity of greater than 0.5 was achieved in 86.7%. Sixteen children who underwent unilateral surgery showed improvement from a preoperative mean of 0.07 with a range of 0.0 – 0.4 (decimal) to a mean of 0.27 with a range of 0.0 – 0.7 postoperatively. Patients who underwent unilateral surgery had poorer preoperative visual acuities than bilateral cases and no unilateral patient achieved a postoperative visual acuity of 1.0.

Conclusions: The "bag-in-the-lens" implantation approach is safe and well tolerated in the pediatric population. It must also be noted that unilateral cataracts still have a high predilection for amblyopia and therefore still have a more guarded prognosis. Earlier surgical intervention and follow up may yield more promising results in the future.

An Audit of the Post-Operative Refractive Results Following Cataract Surgery Over a One Year Period in the Ophthalmic Department of Sligo Regional Hospital.

Tay MC, Rahman N, Ali Y, Mullaney P, Kerins F
Sligo Regional Hospital

Objectives: To audit the post-operative refractive results of patients who underwent cataract surgery in year 2011 in the ophthalmology department of Sligo Regional Hospital, Ireland.

Methods: Retrospective cohort study through electronic medical record system (Medisoft). Our results were compared with the benchmark standards obtained from cataract surgery guidelines published in year 2010 by Royal College of Ophthalmologists, UK

Results: A total of 1319 cataract surgeries with monofocal intraocular lens implant were performed on 1170 patients. Sixty percent (785 cases) of the total number of cataract surgeries had post-operative refractive outcome recorded on their 4-week post-op visit. Six hundred and eighty-six eyes (686/785 = 87.39%) managed to achieve a refractive outcome within +/- 1D of the target refraction. There were 15 eyes (15/785 = 1.91%) with ≥ ±2 dioptres deviation from post-operative refractive target. Eighty four eyes (84/785 = 10.7%) had post-operative refractive deviation of between 1 diopters and 2 diopters. Zeiss IOL Master biometry was used in 58.34% of the cases. 90.4% of a total of 458 cases that used Zeiss IOL Master, achieved post-operative spherical equivalence of < ±1 diopter as compared to only 83.2% of a total of 327 cases that used ultrasound biometry ($p<0.01$).

Conclusions: Eighty-seven percent (87%) of our post-operative cataract cases in year 2011, managed to achieve a refractive outcome within ±1D of the target, which surpassed the benchmark of a refractive outcome within +/- 1D of the target in 85% of cases. Optical biometry yielded better post-operative refractive outcome compared to the ultrasound biometry, which is more user-dependent for accuracy primarily due to variable amount of corneal compression.

Has the Age Profile of Cataract Surgery Really Changed in the Past 10 Years?

Tevlin R, Cunniffe-Conlon G.
Department of Ophthalmology, Mater Misericordiae University Hospital, Dublin.

Objectives: To investigate the age and sex profile as well as the anaesthetic method utilized in patients having cataract surgery over a 10-year period.

*(**Note:** the results below detail only the preliminary results of the experience from 2006-2012, as further results are in progress at time of abstract submission.)*

Methods: Operating theatre logbooks were retrospectively reviewed. All patients who had cataract surgery in the principle ophthalmic theatre between January 2006 and December 2012 in the Mater Misericordiae University Hospital were identified. When cataract extraction was combined with another intraoperative procedure, these patients were excluded from the study.

The cases were assessed for age, sex, method of cataract extraction and type of anaesthetic.

At time of the preliminary results, the patients having cataract surgery were categorized according to the date of the procedure as follows: Group 1: 2011-2012, Group 2: 2009-2010, Group 3: 2007-2008.

Preliminary statistical analysis was performed with STATA (StataCorp. 2009. Stata 11 Base Reference Manual. College Station, TX: Stata Press.)

Results: Four thousand seven hundred and eighteen patients who had cataract surgery from January 2006 – December 2012 were initially identified. The mean age of all patients was 72.7 years ± 12.4 (SD), mean age of females was 74.2 years ±11.8 (SD), and the mean age of males was 70.7 ± 13.0. The age profile of patients having cataract surgery was comparable in all three groups (mean age; group 1: 73.2 ± 12.4 years, group 2: 72.5 ± 12.1 years, group 3: 72.3 ± 12.8 years.)

The sex distribution was found to be: Group 1 39.2% male, 60.8% female; Group 2: 41.1% male, 58.9% female; Group 3 male 43.6%, female 56.4%, reflecting a female predominance. During the period examined, the number of cataract surgical procedures performed increased: Group 1:1452 procedures (31%), Group 2: 1476 procedures (31%) and Group 3: 1790 procedures (38%).

The overall method of anaesthesia was assessed: peribulbar block 39.5%, topical local anaesthetic 32.1%, subtenon's 22.6%, general anaesthetic 5.5% and retrobulbar 0.2%. The majority of cataract extractions were performed by phacoemulsification (98.6%).

Conclusions: It is hypothesized that patients undergoing cataract surgery are increasing in age. However, on initial review of our results, the age profile of the 4217 patients studied between 2006 and 2012 did not change significantly over the time period. There was a female predominance. Local anaesthesia was the most frequently utilized method of anaesthesia and, consistent with previous study, phacoemulsification was the most common method of cataract extraction

We look forward to completing our review of a 10-year experience of cataract surgery. This data is useful for planning service modification. It is noteworthy that the percentage of older males and older females is projected to rise from 9.7% in 2002 to between 13.9% and 14.1% in 2021 and from 12.5% in 2002 to between 15.8% and 16.4% in 2021 respectively.

Intraocular Telescope Surgery in End-Stage ARMD (Case Series)

Keegan D, Stephenson K
Mater Misericordiae Hospital/Mater Private Hospital

Objectives: To assess the efficacy of intraocular telescope surgery in 2 cases.

Methods: After careful case selection (dry ARMD, no dual ophthalmic pathology, no major medical comorbidities), phaco and (Visioncare) intraocular telescope surgery to decrease subjective scotoma while aiming to improve reading vision.

Results: 2 successful cases, still in training stage. Ongoing review + 3 further prospective cases.

Conclusions: With careful case selection, can be a further treatment option in end stage dry ARMD. Cost is preventative (12,500 euro for implant alone.)

Outcomes of Corneal Transplantation in Irish patients with Congenital Hereditary Endothelial Dystrophy (CHED)

AlArrayedh H, Collum LMT, Murphy CC
Royal Victoria Eye & Ear Hospital, Dublin
1. Royal Victoria Eye and Ear Hospital, Dublin. 2. Dept of Ophthalmology, Royal College of Surgeons in Ireland

Objectives: To report the outcomes of corneal transplantation in Irish patients with congenital hereditary endothelial dystrophy (CHED).

Methods: Records of all patients with CHED who underwent corneal transplantation at the Royal Victoria Eye and Ear hospital in Dublin, from 1978 to 2013 were retrospectively reviewed. Patient demographics, preoperative and postoperative clinical data, visual acuity, graft survival, and graft clarity were analyzed.

Results: A total of 14 patients with confirmed CHED underwent corneal transplantation. Thirty-three corneal transplants were performed, which included 32 penetrating keratoplasties (PKP) and 1 descemet's stripping endothelial keratoplasty (DSEK). They included 24 primary grafts and 9 re-grafts. The graft survival rates at final follow-up were 46% and 33% in the primary graft and re-graft groups, respectively. Preoperative best-corrected visual acuity (BCVA) was 6/60 or worse in all patients. At the final post-operative visit, the BCVA was 6/24 or better in 4 eyes following primary corneal transplantation, 6/48 in one eye following re-grafting and was 6/60 or worse in all other eyes. The mean time to graft failure was 16 months (range, 0-37 months). The mean follow-up time was 118 months (range, 1-228 months). Total graft survival with a clear cornea at final follow-up was 58% (14 of 24 eyes). Only 50% of the patients continue to attend for follow up.

Conclusions: This study has demonstrated a poor outcome from corneal transplantation for CHED in Irish patients relative to other indications. This arises from a combination of dense amblyopia and a high risk of graft failure in the long term.

Screening Procedures and Surgical management of Keraticonus in a European Ophthalmic Practice

Condon P.
Waterford Eye Specialists

Objectives: To document a management process for all grades of eye keratoconus disease in a large group of patients and relatives with reference to Cross Linking (CXL), Intracorneal rings (ICR) and Deep Anterior Keratotomy (DALK)

Methods: All young person's presenting with myopia, with or without astigmatism, the immediate relatives of KC patients and Down's Syndrome were screened topographically for evidence of Forme Fruste (FF) and active KC. FF and early KC cases were monitored every six months for progression and referred for CXL if seemed to progress. Only advanced cases with astigmatism up to 58D were first treated with CXL some of which were followed by ICR six months later. Cases with apical scarred corneas and gross astigmatism were referred for DALK. Finally contact lenses were used to optomise and rehabilitate vision if necessary.

Results: In a period of 5 years (2008-2013) 160 patients (295 eyes with KC) were treated with either CXL along (27 eyes), femtosecond ICR either alone or combined with CXL (23 eyes) and DALK in 12 eyes for more advanced cases. Visual results wer excellent and will be report in in the final presentation.

Conclusions: In view of the fact that early treatment with XCL is so successful in stabilization of KC, the use of contact lenses is considered more appropriate for visual rehabilitation of patients who have been treated with the above treatments. Monitoring for progression of KC was also considered to be more difficult with the wearing of contacts.

Financial Disclosure: None

Six-month Follow-up of a New Intracorneal Inlay for the Treatment of Presbyopia

Baily C, O'Keefe M.
Mater Private Hospital, Dublin.

Objectives: To clinically evaluate the effect of the ICOLENS corneal inlay in the treatment of presbyopia at one year.

Methods: A prospective non-randomised clinical study. The inlay has been inserted in the non-dominant eye of 52 eyes through a femtosecond-created pocket. Inclusion criteria included emmetropia (spherical equivalent:-0.5 to +0.75), unambiguous ocular dominance, pupil diameter between 2.4 to 4.2 mm at photopic illumination, central corneal thickness >500µm and uncorrected near visual acuity (UNVA) of 0.4logMAR (20/50) in the non-dominant eye. The optical principle utilised is that of a bifocal lens with a central zone for distance VA and a peripheral optical zone for near VA. Outcome measurements included uncorrected near and distance visual acuity and complication rate.

Results: The mean UNVA in the surgical eye improved preoperatively from N18/N24 to N8 postoperatively ($p = 0.000$) with 51 patients (98%) reading N16 or better and 14 patients (27%) reading N5 or better. The mean ± SD logMAR UDVA in the surgical eye increased from 0.04 ± 0.13 preoperatively to 0.23 ± 0.15 postoperatively ($p = 0.000$). There was a mean ± SD loss of 1.69 ± 2.04 lines of vision ($p = 0.000$). Binocularly there was a mean ± SD gain of 0.56 ± 1.01 lines of vision postoperatively ($p = 0.000$) with 24 patients (46%) gaining ≥ 1 line. There were 11 implants explanted due to minimal improvement in UNVA. There were no significant adverse events reported throughout the study.

Conclusion: Implantation of the ICOLENS corneal inlay was a safe and reversible procedure that provided a significant improvement in UNVA associated with a variable loss of monocular UDVA at six months. One year results to follow.

Financial Disclosure: We received no financial support for this study.

Long Term Efficacy and Safety of Refractive Surgery in Patients with Accommodative and Non-Accommodative Strabismus

Farrell S, O'Mullane G, Kirwan C, O'Keefe M.
The Mater Private Hospital, The Children's University Hospital

Objectives: We wished to examine the long-term outcomes of refractive surgery on ocular alignment, motor fusion and stereoacuity in patients with strabismus.

Methods: In this prospective study, all patients with manifest strabismus undergoing refractive surgery over a 27 month period at a single centre were included. Visual acuity, refractive error, ocular alignment, fusion and stereopsis were measured pre-operatively. Surgery included LASIK, LASEK or phakic intra-ocular lens insertion. Patients with best-corrected visual acuity of worse than 6/18 in either eye, patients with a greater than 2 dioptre change in refraction following cycloplegia and patients unavailable to return for long-term follow-up were excluded. Patients were recalled for assessment of visual acuity, refractive error, ocular alignment, fusion and stereoacuity again 3.5 to 6.5 years following surgery.

Results: 14 patients were included in the study. Mean follow up duration was 4.5 years (Range 3.5 to 6.5). 6 cases were of accommodative esotropia. 3 cases were of non-accommodative esotropia and 5 cases were of exotropia. Post-operative uncorrected Snellen visual acuity was within one line of pre-operative best-corrected visual acuity in all cases. No patients suffered from diplopia at follow-up. There was no significant difference between angle of deviation pre-operatively with spectacle correction and post-operatively unaided at follow up in patients in all groups ($p<0.05$). Stereoacuity decreased in one patient, increased in 4 patients and remained unchanged in 9 patients.

Conclusions: This study confirms that refractive surgery is safe and effective in patients with strabismus over the longer term. At long term follow up, no patients developed decompensation of strabismus or diplopia and ocular alignment unaided remained similar to pre-operative ocular alignment with glasses.

Outcomes of Supracor LASIK algorithim in Presbyopic Hyperopes

Moran S, O'Keefe M
Mater Private Hospital, Dublin

Objectives: To evaluate results of the corneal excimer-based Supracor LASIK procedure in presbyopic hyperopes.

Methods: This is a phase IV prospective single-centre, single-surgeon study to investigate results of the corneal excimer based Supracor algorithim in presbyopic hyperopes. Inclusion criteria were age 48-65 years, with a manifest refraction in range: sphere; +0.75 to +5.0D, cylinder; -2.0 to 0.0D, with a minimal add of 1.5D required bilaterally for reading. Outcomes measured included monocular and binocular best corrected and uncorrected near, intermediate, and distance visual acuity as well as contrast sensitivity and stereopsis.

Results: Nomogram adjustments were required during the study to optimize patient outcomes. Results to follow.

Conclusions: The Supracor excimer presbyopia treatment is a bilateral, varifocal LASIK procedure designed to provide patients with good vision at near,far and intermediate distances in both eyes. Results so far show an effective and safe solution to presbyopia, although further long-term data is required to confirm stability of these outcomes. Successful patient outcomes with Supracor may require adjustment of treatment algorithm and target refraction. Appropriate patient selection, education and management is critical.

The Dublin Uveitis Evaluation Tool (DUET) – an Algorithm for Earlier Diagnosis of Spondyloarthropathies by Ophthalmologists in Acute Anterior Uveitis.

O'Rourke M[1], Haroon M[2], Ramasamy P[1], FitzGerald O[2], Murphy CC[1]
[1] Royal Victoria Eye and Ear Hospital, Dublin & [2] St Vincent's University Hospital, Dublin

Objectives: The incidence of spondyloarthropathy (SpA) is 1%. Early diagnosis is crucial as morbidity in SpA is related to duration of the disease. Advanced disease is typified by joint fusion in the axial skeleton but even early disease can impact greatly on quality of life. An increased prevalence of cardiovascular disease in SpA also reduces life expectancy. Acute anterior uveitis (AAU) is the first manifestation of SpA in 20% of patients. An acutely painful red eye will prompt a patient to seek medical attention more readily than lower back pain of insidious onset. The first aim of this study was to establish the incidence of previously undiagnosed SpA in patients presenting with AAU. The second aim was to establish the predictive clinical factors in these patients so as to formalize a referral algorithm for early referral to a rheumatologist with the aim of earlier diagnosis and treatment.

Methods: 104 consecutive patients with non-infectious AAU attending the casualty department at the Royal Victoria Eye and Ear Hospital from September 2011 until June 2012 were recruited prospectively. Other causes of AAU and a known history of SpA were excluded. Patients who were HLA-B27 positive or had at least one of the following were referred for rheumatology opinion: inflammatory backache, joint swelling, enthesitis, history of psoriasis or inflammatory bowel disease and family history of SpA.

Results: A new diagnosis of SpA was made in 42 patients. For these, over 60% had previously attended their GP for backache and the average duration of backache was 9.36 years prior to diagnosis. For 31%, this was their first episode of AAU. HLA-B27 positivity and backache were the most statistically relevant features of the algorithm with an odds ratio of 27 and 21 respectively. This algorithm had sensitivity of 100% but specificity of only 54%. By adjusting the algorithm for the most significant confounding clinic features of these patients a new algorithm was created. The new algorithm advises that any patient with AAU and back pain of onset under 45 years of age with duration greater than 3 months should have HLA-B27 checked. If this is positive then the patient should be referred. In addition to this, any patient presenting with AAU with a personal history of psoriasis, even in the absence of back pain should also be referred. The updated algorithm has sensitivity of 95% and specificity of 98%. Current work is validating this algorithm for appropriate rheumatology referral in a new cohort of AAU patients.

Conclusions: Close collaboration between ophthalmologists and rheumatologists utilizing our algorithm will result in earlier treatment intervention to improve disease outcome in SpA.

Audit of After-Hours Work Requirement of the Senior House Officer after 5pm and its Implications on Compliance with the EWTD

Feyzrakhmanova M, Dervan E, O'Rourke M, Cassidy L.
Trinity College Dublin; Royal Victoria Eye and Ear Hospital

Objectives: With the recent European Working Time Directive (EWTD) challenges occur in staffing a 24hr eye casualty. We aim to establish the work requirement of the senior house officer after 5pm and make recommendations that would enhance compliance with the EWTD.

Methods: We examined the number of patients to be seen after 5pm in eye casualty, the presentation, triage category and catchment area of patients attending eye casualty after 10 pm, the requirements of the wards after 5pm and reason for patients attending outside their catchment area.

Results: Over a 14 months period, a mean of 10.59 +/- 4.03 patients per night registered in the eye casualty after 5pm. Over a 2 month period a mean of 15.64 +/- 6.842 patients who registered before 5pm remained to be seen after 5pm on weekdays. Therefore, there is a mean of 26 patients to be seen after 5pm on weekdays. A mean of 1.042 +/- 1.174 patients registered after 10pm with none on 43% of the nights. 66% of patients were triaged as non-urgent.

Conclusions: Closing the eye casualty at 10pm to walk in referrals would enhance compliance with the EWTD without significantly affecting service provision.

The Retinal Pigment Epithelial Cell and Peripapillary Atrophy: Potential Mediators of Glaucomatous Optic Disc Cupping?

Hughes E [1,2], Wallace D [1], Docherty N [3], Clark A [4], O'Brien C [1,2]
[1] Department of Ophthalmology, Mater Misericordiae University Hospital, Dublin, Ireland
[2] School of Medicine and Medical Sciences University College Dublin, Ireland
[3] Department of Physiology, Trinity College Dublin, Dublin, Ireland
[4] Department of Cell Biology and Anatomy University of North Texas, Fort Worth, Texas

Objectives: There is a well established link between peripapillary atrophy (PPA) and glaucoma. Histologically the zone of PPA adjacent to the optic disc (beta zone), is bare of retinal pigment epithelial cells (RPEC) but the aetiology is unknown. Epithelial cells in other organs have been shown to differentiate to a myofibroblastic phenotype through the process of epithelial to mesenchymal transition (EMT) in response to a variety of stimuli. EMT has been shown to play a role in fibrotic disease. This work examines the possibility that glaucoma-like stimuli such as stretch and growth factor stimulation may induce EMT in the RPEC, causing it to have a migratory ability and myofibroblastic phenotype. This may infer a role for the RPEC, and therefore PPA, in glaucomatous optic disc cupping.

Methods: The human retinal pigment epithelial cell line, ARPE-19, was exposed to cyclical stretch (15% cell elongation, 1Hz cycles). As a positive control, cells were treated with recombinant human transforming growth factor beta-1 (TGFβ1, 10ng/ml) to induce EMT. Post-treatment analysis included real time polymerase chain reaction for gene expression of Zona Occludens 1 (ZO-1), alpha smooth muscle actin (αSMA), collagen type 1A1, and TGFβ1. The migratory capacity of ARPE-19 cells under the influence of growth factors TGFβ1 and tumour necrosis factor alpha (TNFα) was examined by scratch migration assay. Human optic nerve heads from normal and glaucomatous donors underwent immunohistochemical analysis for TGFβ1, and RPE65 (visual cycle protein found in RPEC).

Results: Cyclical stretch of ARPE-19 cells resulted in a decrease in epithelial markers, and an increase in myofibroblastic markers. Growth factor treatment with TGFβ1 and TNFα increased the migratory capacity of the cells as measured by scratch assay. Immunohistochemical analysis of human optic nerves demonstrated increased levels of RPE65 and TGFβ1 in the glaucomatous optic nerve compared to normal.

Conclusions: ARPE-19 cells were shown to change from an epithelial to a mesenchymal phenotype after exposure to glaucoma-like stimuli in-vitro. There is also immunohistochemical evidence suggesting the presence of RPEC within the glaucomatous optic nerve head from human eyes. This may indicate a role for the RPEC and PPA in glaucomatous cupping. Future work will examine the use of EMT inhibitors on the process.

An Analysis of Normal and Glaucomatous Human Lamina Cribrosa and Trabecular Meshwork Cell Behaviours as Determined by the Surrounding Extracellular Matrix

McNally S [1], Wallace DM [1,2] & O'Brien CJ[1,2]
[1]Dept. of Ophthalmology, Mater Misericordiae University Hospital, Dublin. [2]School of Medicine and Medical Science, University College Dublin, Dublin

Objectives: Our lab and others have demonstrated that both Lamina Cribrosa (LC) and Trabecular Meshwork (TM) cells are central to the glaucoma disease process by producing Extracellular Matrix (ECM) proteins which harden the respective tissue (pro-fibrotic process). In addition, previous work from our group has shown that there are higher levels of ECM proteins in LC cells obtained from glaucoma donors compared to normal controls. The purpose of this research project was to assess the ability of normal and glaucomatous human LC and TM cells to interact with their surrounding extracellular matrix.

Methods: Human LC and TM cells were grown on a range of cellular matrices of increasing stiffness. The response of cells to differing environments was assessed by analysis of cell movement, growth and contractility processes. An analysis of the in-vitro migratory, proliferative and contractile capacity of trabecular meshwork and lamina cribrosa cells obtained from normal and glaucoma patient donors was performed by means of scratch wound assays, indirect immunofluorescence, SDS-PAGE and quantitative PCR analysis of monolayer versus 3D culture conditions.

Results: Preliminary data shows the ability of the stiffening-ECM to induce phenotypic changes in normal TM cells such that they adopt an abnormal (fibroblastic) morphology. We have found cellular processes of migration, proliferation and contractility to be altered in the glaucomatous disease state. Furthermore, normal and glaucomatous TM cells seeded onto a laminin-rich ECM display disparate patterns of cellular network organisation. Glaucomatous TM cells have a higher proliferative index than normal TM cells, as judged by Ki67 staining. TM cells treated with the pro-fibrotic cytokine Transforming Growth Factor beta (TGF-beta) express elevated levels of fibrotic markers (e.g. snail, thrombospondin (TSP1), vimentin; $P < 0.05$). We propose TGF-beta and one of its activators TSP1 as major factors which drive abnormal cell behaviour, and consequently, irreversible disease progression.

Conclusions: We believe that a 'matrix-stiffening model' proves a reliable tool with which to detect the differential responses of normal versus glaucomatous cells to the extracellular environment. This research project has enabled the definition of normal versus disease cell behaviour on a molecular level.

Proteomic Analysis of Uveal Melanoma

Ramasamay P, Henry M, Linge A, Horgan N, Murphy C, Clynes M, Kennedy S & Meleady P.
1. Royal Victoria Eye and Ear Hospital, Dublin. 2 National Institute of Cellular Biotechnology, Dublin

Objectives: Uveal melanoma (UM) is the most common primary intraocular malignancy in adults with an incidence of 5-7 per million per year. Despite successful treatment of the primary tumour, 50% of patients develop metastatic disease. Survival rates at 5, 10 and 15 years are 65%, 50% and 45% respectively. The primary objective of this study is to identify differentially expressed proteins between primary uveal melanoma tissues of patients who developed metastatic disease versus those who did not. The secondary objectives are to further the molecular biological understanding of the events governing development of metastatic disease and to identify targets for therapy

Methods: 8 fresh frozen primary UM tissues of patients who developed metastasis vs. 8 who did not were subjected to quantitative, label-free LC-MS proteomic analysis. These patients had a minimum of 7 years follow-up. UM tissue samples were homogenised, lysed and proteins were digested into peptides using trypsin prior to mass spectrometry (MS) analysis. Criteria applied to the data prior to exporting the MS output file for peptide identification were peptide features with $p < 0.01$, charge states +1 to +3 and > 3 isotopes per peptide. Peptides were identified with MASCOT searched against the UniProtKB–SwissProt database. Proteins with < 3 peptides and proteins with peptide conflicts were excluded. Only differentially expressed proteins with $p < 0.05$ between the two patient groups were considered.

Results: 50 proteins met the statistical criteria. 7 of those showed good separation between metastatic and non-metastatic disease groups. 2 proteins were selected for further validation. One of these is thioredoxin-dependent peroxidase reductase (PRDX3) which was 1.58 fold increased in metastatic primary tissues (p: 0.002). Immunohistochemistry (IHC) on 19 formalin-fixed paraffin embedded (FFPE) primary UM tissues that subsequently metastasized vs. 18 FFPE primary UM tissues that did not metastasize shows variable staining in both groups. A larger IHC study on 200 tissue microarray samples is currently being performed.

Conclusions: Proteomic analysis of 8 metastatic vs. 8 non-metastatic primary uveal melanoma tissue has identified novel proteins which are currently being validated using immunohistochemistry.

Identifying New Targets of Viral Regulatory protein ICP0 in Herpes Simplex Viris Type-1 (HSV-1) Keratitis

Shahnazaryan D,[1] Lazzari E, [2] Jefferies C,[2] Murphy C [1,2]
1.Royal Victoria Eye and Ear Hospital, Dublin. 2.Department of Molecular and Cellular Therapeutics, Royal College of Surgeons in Ireland, Dublin.

Objectives: Herpes Simplex Keratitis (HSK) is the most common cause of infective corneal blindness in the developed world. HSV-1 infection induces host antiviral responses, including induction of type I interferons. We have previously identified the important role of viral protein ICP0 in overcoming this responses by inhibiting type 1 interferon (IFN) production. In this study we wanted to further investigate the possible targets of ICP0 within the IFN pathway.

Methods: 293T cell lines were transfected with a plasmid expressing ICP0. Luciferase dual reporter gene assays were used to identify ICP0 specific targets among the components (MyD88, RIG-I, IPS-1, NFkB, MAVS, IRF3) of the type 1 IFN pathway. Western Blotting of transfected cell lysates was used to investigate the degradation of possible targets.

Results: Our experiments show significant degradation of MyD88 and inhibition of interferon responses in the presence of ICP0. The expression of RIG-I, IPS-1 and IRF3, however, remains unchanged.

Conclusions: A key element of the innate immune response to HSV-1 infection is the production of IFN by infected epithelial cells. In order to initiate such response the HSV-1 needs to be recognized by the cells of the ocular surface. This role is attributed to so called toll-like receptors (TLRs). TLR9 in particular is responsible for recognition of dsDNA viruses such as HSV-1 and has been shown to be upregulated in corneas of patients with HSK. MyD88 is an adaptor molecule required for TLR9 signaling that leads to production of type 1 interferon. Our results suggest that HSV-1 viral protein ICP0 could restrict this antiviral response by targeting MyD88 for degradation. Earlier studies reported that ICP0 antagonizes IRF3 pathway to inhibit interferon production. We did not, however, observe degradation of IRF3 by ICP0. This suggests that there could be an alternative mechanism by which HSV-1 limits IRF3-dependent antiviral response.

Five Year Outcomes of Deep Sclerectomy, Trabeculectomy and Phaco-Trabeculectomy in the Royal Victoria Eye and Ear Hospital

Dervan E, McAnena L, Goetz R, Doyle A
RVEEH, Dublin

Objectives: To compare the longterm outcomes and complications of deep sclerectomy (DS), trabeculectomy (Trab) and phaco-trabeculectomy (PT) by a single surgeon

Methods: A retrospective chart review obtaining data on early post operative complications, IOP, use of supplementary medical therapy, failure (IOP>21mmHg, reoperation for glaucoma, or loss of light perception vision), qualified success (IOP<21mmHg with medications) and complete success (IOP<21mmHg on no medications)

Results: A total of 89 eyes of 75 patients were included in the review, 32 in the DS group, 19 in the Trab group and 38 in the PT group. Early postoperative complications occurred in 6 patients (19%) in the DS group, in 10 patients (52%) in the Trab group and in 12 patients (32%) in the PT group. 5 year data could be established in a total of 43 patients, 17 in the DS group, 10 in the Trab group, and 16 in the PT group. At 5 years, IOP (mean±SD) was 11.6±3.8 in the DS group, 10.7±3.3 in the Trab group and 13.5±3.1 in the PT group. The number of glaucoma medications (mean±SD) was 1.3±1.4 in the DS group, 0.2±0.6 in the Trab group and 0.9±1.5 in the PT group. At 5 years in the DS group 12% (2/17) failed, 88% qualified success (15/17) and 41% a complete success (7/17). In the Trab group 10% (1/10) failed, with all being a complete success. In the PT group 12% failed (2/16), with all a complete success.

Conclusions: At 5 years the trabeculectomies have a lower IOP without medication and higher early post-operative complications compared to the deep sclerectomy group.

Treatment Outcomes of Ahmed Valve Implantation for Uveitic Glaucoma in a Tertiary Uveitis Referral Centre

McGuire M, Murphy C.
Royal Victoria Eye and Ear Hospital, Dublin

Objectives: To evaluate the efficacy of Ahmed valve implantation in patients with uveitis in this centre and compare the results to similarly reported studies.

Methods: This was a retrospective interventional case series conducted in a tertiary care uveitis service. We examined the medical records of 12 consecutive patients who were implanted with Ahmed valves for uveitic glaucoma. All operations were performed by a single surgeon over the past 3 years. Information on age, sex, diagnosis, preoperative intraocular pressure, preoperative medications, postoperative pressure, postoperative medications, complications and length of follow up were documented.

A case is considered a success if the IOP >5mmHg and <21mmHg and was reduced by at least 25% from that before surgery, without further glaucoma surgery, with or without the use of glaucoma medications, at last follow up appointment. Qualified success excludes cases in which serious complications such as retinal detachment, hypotony maculopathy, malignant glaucoma, endophthalmitis, phthisis bulbi or corneal decompensation occurred.

Results: Success was achieved in 91.6% eyes (11 of 12 eyes) at last follow up. All patients (100%) had an IOP within the range of 5mmHg and 21mmHg.

The average follow up was 17.4 months. The average IOP pre-operatively was 31.6mmHg. After 12 months the mean IOP was 15.7mmHg, a mean reduction of 18.5mmHg from the preoperative pressure. The average IOP after 2 years was 15.2mmHg, an average reduction of 18.4mmHg and the average IOP at final visit was 14.5mmHg, a mean reduction of 14.9mmHg.

Qualified success occurred in 83.4% patients (10 of 12 eyes). 1 eye was hypotonous with a hyphema postoperatively and developed macular oedema 6 months following the surgery. The other eye, of the same patient, developed cystoid macular oedema 2 weeks after the operation.

91.6% (11 of 12 patients) had a reduction in the number of antihypertensive medication. The average number of hypotensive agents per eye was 4.5 preoperatively and 1.75 at last follow up visit.

Conclusions: In conclusion, it can be elucidated that our rate of unqualified success and qualified success, described above, is comparable to other studies reported in the literature. While we report increased numbers of postoperative hypotensive agents

needed, compared to similar studies, this can be equated to the increased complexity of our patient population.

A 15 Year Audit of Filtering Glaucoma Surgery Performed in the Mater Hospital between 1998 and 2012.

Thacoor D, O'Brien C.
Ophthalmology Dept; Mater Misericordiae Hospital. Dublin

Objectives: With newer and improved topical treatments for glaucoma, there has been a well documented decline in glaucoma surgery. Also, some reports suggest that it is now becoming a sub-specialty, with only a small proportion of consultants performing these procedures on a regular basis.
Our objectives were to assess:

1) if there was a shift towards sub-specialization;
2) if there was a decline in the number of procedures performed per year;
3) the training of junior doctors in glaucoma surgery; and
4) any particular trends in glaucoma surgery (for example, the use of antimetabolites).

Methods: Data was retrospectively collected from theatre logbooks from 1998 to 2012. All filtering procedures (trabeculectomies, combined phaco-trabeculectomies and valves) were recorded and further subdivided into augmented (with 5 fluorouracil/mitomycin C) and non-augmented. The number of procedures per year as well as the percentage of procedures performed by trainees under supervision was also analyzed.

Results: A total of 535 glaucoma procedures were performed in the Mater between 1998 and 2012. 28.8% of theses were performed by trainees under supervision. The number of procedures/year increased from 28 in 1998 to 39 in 2012. There was also a trend towards sub-specialization with only 2 surgeons performing glaucoma surgery during the later years of our audit compared to 6 in 1998. 26.0% (131/503) of trabeculectomies/phaco-trabeculectomies were augmented, 57.3% with 5FU and 42.7% with MMC.

Conclusions: Our audit provides significant evidence that glaucoma surgery is indeed becoming a sub-speciality. Moreover, 28.8% of procedures were performed by junior doctors, thereby ensuring adequate training in glaucoma surgery. The number of procedures/year in our unit did not decrease but this information should be compared with similar audits in other Irish units before further conclusions can be drawn.

Evaluation of Pain Perception Among Diabetic Retinopathy Patients Undergoing Pan Retinal Laser Photocoagulation

Dyer H, Lambon E and Silvestri G.
Belfast Health and Social Care Trust

Objectives: 1. Quantification of pain intensity experienced by Diabetic Retinopathy patients undergoing Laser Pan Retinal Laser Photocoagulation Therapy (PRP).
2. Optimisation of pain management protocols and practices pertinent to PRP procedure.

Methods: Questionnaire based audit targeting a sample of 100 patients suffering from diabetic retinopathy and undergoing at least one session PRP in the Royal Victoria Hospital-BELFAST, UK. Patients and treating doctors are asked perspective questions focused mainly on perception and quantification of pain as well as pain management protocols followed in those sessions. Doctors also received set of technical questions directly relevant to the procedure of PRP. Data are collated and analysed to construe conclusions and recommendations in order to optimise and improve current practice.

Results: To be announced.

Conclusions: To be announced.

A Review of Paediatric Retinal Detachment at a Tertiary Referral Unit in Ireland 2008 - 2011

Gilmore S [1,2], O'Keefe M [1,2] Keegan D J [1,2]
1Temple Street National University Teaching Hospital, Dublin 2 Mater Misericordiae University Hospital, Dublin

Objectives: Paediatric retinal detachment is a rare and difficult to manage aspect of vitreo-retinal practice worldwide. The incidence is 2.9/10000. The commonest causes are trauma, congenital retinal disorders/syndromes, tumours and childhood infections. We wish to report on the current experience at a paediatric retinal service in Ireland.

Methods: We report the causes, management and outcomes of all paediatric retinal detachments requiring vitreo-retinal surgery referred to Temple Street National University Teaching Hospital and the Mater Misericordiae University Hospital, Dublin from January 2008 - Dec 2011.

Results: Twelve children were operated on in this period. Six had suffered traumatic injury, there were two with Peter's anomaly, one with CHARGE syndrome, one with Stickler's syndrome, one with Coats disease, and one high myope. There were 18 procedures performed. Two cryobuckle procedures were performed (myope and one trauma case). A cryotherapy alone was required on the patient with Coat's disease. The other trauma and syndromic cases were treated with vitrectomy and oil (nine cases in total having 15 procedures including removal of oil). Three cases have had their oil removed at last follow up. Six patients have oil still in situ.
Ten retinas are attached at follow up, one child has a stable nasal retina detachment (tractional under oil), one child has a detachment under oil requiring intervention. None have phthisis. The visual outcomes are poor with a median acuity of hand motions (range 6/18 - HMs). Patients with successful buckle surgery have better visual outcomes (6/12 and 6/18 BCVA).

Conclusions: Paediatric retinal detachments are rare. If an intraocular procedure is required the visual prognosis is poor. Aggressive and proactive management of retinal detachment including re-operation enhances likelihood of anatomical success. With the development of exciting sight restoration technologies (retinal implants and stem cell transplantation) we are duty bound to preserve the ocular integrity of these children that are unfortunate enough to require retinal detachment surgery at a young age.

Outcome of Retinal Detachment Surgery Using Subretinal Trypan Blue for the Identification of Retinal Breaks

Manning S, Cahill M.
Royal Victoria Eye and Ear Hospital, Dublin

Objectives: To assess the outcome of retinal detachment surgery using subretinal trypan blue for the identification of retinal breaks.

Methods: Retrospective study of 58 patients (58 eyes) undergoing surgery (69 procedures) for rhegmatogenous retinal detachment (RD) over 2 years, where subretinal trypan blue (SRTB) was used to identify either the primary or secondary retinal break(s) (RB).

Results: SRTB was used in 51 and 18 cases to identify primary and secondary RB, respectively. The mean follow up period (± SD) was 12.9 (± 9.8) months. Mean (± SD) logMAR best-corrected visual acuity (BCVA) improved from 1.18 (± 0.71) preoperatively to 0.73 (± 0.50) postoperatively ($p < 0.01$). Visual improvement/stability occurred in 80% of eyes and was ≥ 2 lines in 63%. Visual loss occurred in 20% of eyes and was ≥ 2 lines in 13%. The final reattachment rate was 54/58 (93%). There were no complications associated with the SRTB injection

Conclusion: SRTB injection is useful in RD surgery when the responsible RB cannot be identified by internal search with scleral indentation.

Corneal Collagen Crosslinking at the RVEEH; a three-year audit

McAnena L, Dervan E , O'Brien P
Royal Victoria Eye and Ear Hospital, Dublin

Objectives: Corneal collagen crosslinking (CXL) is a technique that uses UV light and a photosensitiser to strengthen chemical bonds in the cornea in order to halt progression of corneal ectasia, most commonly keratoconus. The RVEEH is currently the only public hospital in Ireland offering this treatment. Our aim in performing this audit was to analyse the clinical presentation, corneal topography, indications to treat and post-operative outcomes in patients who underwent CXL at RVEEH over a three year period with at least one year follow up.

Methods: We performed a retrospective chart review and analysed the data using standard parametric techniques.

Results: 50 patients who received CXL from 2009-2011 with pre- and post- operative (at 1 year) corneal toopography were included in the study. 72% were male with a mean age of 24. 28% had atopy, 26% had allergic eye disease, while 54% had no reported co-morbidity. Two patients were treated for post-refractive surgery ectasia.

Decision to treat was made at diagnosis, due to high risk of progression due to age or severity of disease in 40% of patients. Documented progression in vision loss, Kmax, astigmatism and corneal thinning prompted treatment in 26%, 10%, 8% an 14% of patients respectively. Pre-op topography showed mean Kmax of 58.9 dioptres and thinnest point of 452μm.

At 12-18 months post-op, 66% of patients had stable Kmax, 24% had improved by 2D or more, and 10% had worsened by 2D or more with an average loss of 23μm at thinnest corneal point. There were no post-operative infections reported.

Conclusions: CXL is a relatively safe treatment option for corneal ectasia, which successfully halts progression of, or improves, Kmax readings in 90% of patients and should be offered in cases of progression of symptoms or Pentacam readings, or in those at high risk of progression.

Perplexing Orbital Inflammatory Masses

Tevlin R, Murphy D, Thorne J, Kelly P., Mulligan N, Fulcher T.
Mater Misericordiae University Hospital, Dublin.

Introduction: Numerous diseases, involving osseous, vascular, neural, muscular or glandular tissue, can occur in the orbit, affecting visual function. Commonly, orbital disease affects those in childhood and middle age [1]. We briefly describe three unusual cases of orbital mass lesions occurring in later adult life.

Case 1: An 89-year-old female complained of a four-month history of a painless red left eye with reduced visual acuity. On examination, she had a visual acuity of 6/9 (right), 6/12 (left). She had a sunken appearance to the medial aspect of her left lower lid. Eye movements were restricted, particularly on adduction.

Haematological investigations (including full blood count, ANCA and quantiferon) and chest radiograph were non-contributory. Orbital computed tomography (CT) demonstrated a large irregular inhomogenously-enhancing soft tissue mass on the medial aspect of the left orbit with extensive destruction of the left orbit bony wall medially, suggestive of inflammation or neoplasm. Histology of orbital surgical biopsies, revealed a necrotizing inflammatory process with poorly formed epithelioid, giant-cell granulomata and abundant plasma cells. Serum IgG4 levels are awaited, prior to definitive diagnosis.

Case 2: An 85-year-old female underwent routine brain CT following a mechanical fall. This incidentally identified a right orbital mass with maxillary sinus extension. Her medical history was non-contributory. There was notable proptosis in the setting of an otherwise normal exam. Haematological investigations were non-contributory.

The right retrobulbar mass was surgically evacuated. Histological examination showed dense fibro-connective tissue with mixed inflammatory infiltrate (lymphocytes, histiocytes, neutrophils and eosinophils), replacing skeletal muscle.

4 months later, she complained of deterioration in right visual acuity (1/60), increasing proptosis and restricted eye movement. A repeat CT demonstrated an increasing right orbital mass and frontal sinus opacification. C-ANCA was weakly positive. She declined steroid treatment.

Six months later, she described further right visual acuity deterioration (NPL) and an increasing palpable right lower eyelid mass. An urgent anterior orbital biopsy was performed, showing fibrosis with leucocytoplastic vasculitic change, suggestive of Wegener's granulomatosis.

Case 3: A 68-year old lady presented to an outside institution, complaining of a troublesome history of diplopia. She was noted to have left-sided proptosis on examination, with restriction of extra-ocular movements. Haematological investigations

were non-contributory and a CT orbit was requested which illustrated a left orbital mass with involvement of the medial rectus and inferior rectus, and erosion of the adjacent lamina papyracea. An orbital biopsy was performed,which consisted of mixed inflammatory cells. A tapering dose of oral steroids was initiated and the patient was referred to our service for further evaluation and management. Of note, the patient had full routine investigations including, full blood count, renal profile, vasculitic screen, thyroid function, urine microscopy and chest radiography which were normal.

On review, she reported worsening diplopia, in spite of her corticosteroid therapy. A repeat CT orbit was performed, which illustrated the left orbital mass with adjacent bony erosion of the medial wall of the orbit, and involvement of the inferior and medial recti muscles. A surgical biopsy was performed at the level of the secondary skin crease. Histological examination showed fibroadipose tissue with infiltration by a mixed lymphoid population with numerous acute inflammatory cells and focal necrosis. These findings were most in keeping with an orbital inflammatory process and immunohistochemical stains were performed, which showed a mixed lymphoid population (CD20 and CD3 positive). A course of high dose prednisolone (40mg) daily was required to reduce her symptoms, and thus, a rheumatology opinion was sought. The patient has since been reviewed by rheumatology and has commenced on cyclophosphamide therapy. The case was further discussed with the department of histopathology and an IgG4 stain was requested which was strongly positive. IgG4 serology is awaited. Following the result of IgG4 staining, there is a suspicion of IgG4-related orbital inflammation, but a diagnosis of limited Wegener's granulomatosis has also been proposed.

Discussion: Orbital masses can be intra-conal or extra-conal. The most common causes include thyroid orbitopathy, inflammatory disease and lympho-proliferation. Orbital inflammatory masses represent a challenge clinically and histopathologically. A definitive diagnosis can be difficult to delineate. We would like to discuss the aforementioned three cases and reflect on pertinent findings, which can aid in diagnosis. Multidisciplinary involvement with ophthalmology, rheumatology and histopathology is required.

References:

1. Rootman JL. Diseases of the orbit. A multidisciplinary approach. Philadelphia: JB Lippincott; 1988: 119-39.

Please note:
CT – computed tomography.
C-ANCA – cytoplasmic anti-neutrophil cytoplasmic.
NPL – no perception of light.

Review of Frontalis Suspension Procedures in Our Lady's Children Hospital

Hartnett C, McCreery K.
Ophthalmology Department, Our Ladys Children Hospital, Crumlin, Dublin

Objectives: To conduct a comprehensive review of cases of frontalis suspension operations carried out in Our Lady's Children Hospital, Crumlin from October 2004 to December 2012. This procedure is indicated for cases of severe congenital ptosis with poor levator function.

Methods: A specific theatre procedure search was performed of the theatre database for the charts of patients who underwent either unilateral or bilateral frontalis suspension operations from October 2004 to December 2012. All charts were retrospectively analysed and parameters measured included age at presentation, unilateral or bilateral ptosis, sex, BCVA preoperatively and at follow up, complications, revision rate and functional outcomes.

Results: Forty six children (29 males, 17 females) underwent frontalis suspension procedures. 30 (65%) of these were unilateral procedures and 16 cases (35%) were bilateral. Follow-up was from 7.5 years to 0.5 years (mean of 3.5 years). Age at presentation was from 8 weeks to 12 years (mean of 12.8 months). Complications included haematoma in 2 cases and lagophthalmos in 1 case. Fascia lata harvesting was performed in one case of bilateral ptosis in a 12 year old boy and utilized as the suspensory material. Fascia lata from musculoskeletal transplant foundation was utilized in one case of a recurrent ptosis. In all other cases a silicone suspensory material was utilized. Functional outcome and lid position was noted to be very good in 22% of cases, good in 65% and unsatisfactory in 13%. Recurrence of ptosis and revision of frontalis suspension occurred in 6 cases (13%), 4 cases were unilateral, 2 cases were bilateral.

Conclusions: Brow suspension is clinically indicated in cases of severe ptosis where the potential for amblyopia is large. In the last seven years these forty-six children at very young ages have undergone potentially sight-saving procedures and have had good eyelid position outcomes with low recurrence rate at our department.

Retrospective Study on the Outcomes of Patients with Periocular Skin Tumours who had Moh's Micrographic Excision by a Dermatologist and Reconstruction by Oculoplastic Surgeons

Treacy MP, Manning S, Flynn A, Moran B, Gale J, Khan R, Ormond P, Cassidy L
Royal Victoria Eye and Ear Hospital and St. James' University Hospital

Objectives: To describe the outcome of patients who had Moh's micrographic excision of peri-orbital skin tumours by the dermatology department in St. James' University Hospital and oculoplastic reconstruction at the Royal Victoria Eye and Ear Hospital.

Moh's micrographic surgery (MMS) is a tissue-sparing skin tumour excision method, which allows the intraoperative examination of the entire horizontal margin for residual malignant cells. This differs from conventional intraoperative frozen section inspection, where vertical sections are examined and thus the vast majority of the margin is not seen. The published literature suggests that recurrence rates for primary basal cell carcinoma (BCC) is 1-3% with MMS vs 3-10% with conventional surgical excision (CSE) and recurrence rates for recurring BCC is 5-7% with MMS vs >17% with CSE. Thus MMS is considered the gold standard for the treatment of high risk BCC.

There has been collaboration between the oculoplastics team at the RVEEH and the dermatology department in SJUH since 2006 with increasing numbers of periocular skin tumours cases being shared between the two institutions in each subsequent year.

Methods: The charts of all patients who underwent MMS and oculoplastic reconstruction from November 2006 until January 2013 were reviewed. The following data was recorded: histological diagnosis, whether the tumour was primary or a recurrence, number of Moh's layers, size of surgical defect, reconstruction technique, length of follow-up and whether recurrence occurred.

Results: There were 128 patients included in the study. There were 118 BCCs, four squamous cell carcinomas (SCC) and six non-malignant lesions excised. Seven procedures were to excise a recurring BCC. The nodular BCC histological sub-type was most common (68%) followed by sclerosing BCC (8%). Most patients (63%) had the lesion excised in the first layer of Moh's surgery and two patients required four layers. The lesion was located below the eye in 66% of cases, on the medial canthus in 23% and above the eye in 11%. There were various reconstruction methods with the Hughes's flap being most common. Mean follow-up was 2 years and there have been no local recurrences to date. Although one patient with SCC has suffered metastatic spread.

Conclusions: Dermatologists and ophthalmologists can successfully work together to manage peri-ocular skin tumours with Moh's micrographical surgery. The authors urge ophthalmologists to consider MMS prior to excisional biopsy of suspicious lesions.

To Evaluate Endothelial Cell Count Loss after Five Years Following Phakic Intraocular Lens Insertion

Baily C, O'Keefe M.
Mater Private Hospital, Dublin.

Objectives: To determine if Artisan or Artiflex phakic intraocular lens (pIOL) implantation cause significant endothelial cell loss after five years in myopic and hyperopic eyes.

Methods: Prospective, non-randomised clinical study. The study included 200 eyes of 120 patients aged between 21 and 60 years. Inclusion criteria included absence of ocular pathology, refraction outside the parameters for conventional laser refractive surgery, endothelial cell count (ECC) of > 2000 pre-operatively and anterior chamber depth of >3.2mm, ECC was determined pre-operatively and then yearly post-operatively. On-going analysis includes the calculation of pIOL-endothelium depth and lens-pIOL depth (using Optical Coherence Tomography), and to determine if these results are correlated with any changes in ECC.

Results: Preliminary results demonstrated a mean pre-operative ECC of 3034.51±511.44 cells/mm^2, a mean one year ECC of 3085.04±421.85 cells/mm^2 (p=0.55) and a mean five year ECC of 2714.20±284.74 cells/mm^2 (p=0.00). This was a mean gain in ECC from baseline of 1.7% at one year and a mean loss of 10.0% at five years

Conclusion: We demonstrated no significant loss in ECC after 1 year, with a 10% loss at five years following pIOL insertion.

Financial Disclosure: We received no financial support for this study

Mud in Your Eye? Infectious Endophthalmitis after Intravitreal Injection: 4-Year Experience at a Tertiary Referral Eye Hospital

Collins N, Fitzgerald S, Kilmartin D, Knowles S.
Royal Victoria Eye & Ear Hospital, Dublin

Objectives: To report the incidence of presumed infectious endophthalmitis following intravitreal injections in over the 4-year period 2009 – 2012 at a tertiary referral eye hospital in Ireland (Royal Victoria Eye & Ear Hospital), and compare to internationally reported rates.
Methods: Single-centre, consecutive series of cases of presumed infectious endophthalmitis post intravitreal injection, where intravitreal injection of antiangiogenic agents or triamcinolone acetate was the principal procedure, between 01/01/2009 and 31/12/2012. Cases of clinical diagnoses of endophthalmitis or suspected endophthalmitis resulting from intravitreal injection were identified prospectively.

Results: Clinically suspected infectious endophthalmitis after intravitreal injection occurred in 3 of 9,345 injections (0.03%, 95% confidence interval 0.01% to 0.09%) over the four-year period studied. The annual incidences were 0.07% in 2009 (n = 1 of 1,278 injections), 0% in 2010 (n = 0 of 1,787), 0.03% in 2011 (n = 1 of 2,714 injections) and 0.02% in 2012 (n = 1 of 3,566 injections). Two cases followed intravitreal injection of bevacizumab and one case followed intravitreal injection of triamcinolone acetate. All three cases were culture-negative.

Conclusions: A low rate of presumed infectious endophthalmitis after intravitreal injection was observed over a 4-year period in RVEEH. As with all studies of this rare complication, the low incidence of endophthalmitis in this study precludes meaningful risk-factor analysis. However, the incidence with confidence interval is consistent with rates reported internationally.

Through the Eyes of a Child- A Review of Paediatric Ophthalmic Referrals in the Mid-West

Droney T, Nolan A,
Mid-Western Regional Hospital, Limerick

Objectives: The community paediatric ophthalmic services in the Mid-West of Ireland are severely stretched, with hundreds of children awaiting assessment by an ophthalmologist, many of whom have been on a waiting list for several years. This study was undertaken to determine why these children are being referred, the time scale that they are on a waiting list and the clinical findings once assessed. It is hoped that in doing so that measures can be put in place to limit the number of unnecessary referrals and therefore reduce the waiting times for children with genuine ocular pathology.

Methods: Between the months of September and December 2012, all children who were on a waiting list for ocular assessment from one major referral centre in the Mid-West were offered an appointment to be seen in Mid-Western Regional Hospital, Limerick. At this appointment they initially underwent screening by an experienced orthoptist who accurately assessed their visual acuity, obtained an autorefraction and determined if any ocular deviation was present. Note was made of the reason for initial referral, the time spent on the waiting list and any abnormality found on testing. Any children who it was felt required further assessment or treatment were subsequently referred to the main outpatient clinic.

Results: In all, 242 children were invited for assessment. Of these, 127 (52.5%) kept their appointment. The average waiting time for an appointment was 34.48 months. The main reasons for referral were 1) positive family history of strabismus, 2) reduced vision and 3) query squint. As regards family history of strabismus, there were 88 referrals sent, of whom 52 attended for assessment. Of these, 43 (82.7%) had no abnormality detected on screening. There were 60 children referred with reduced vision with 37 attending. Of these, 27 (72.9%) had no abnormality detected. Of the 33 children referred for a possible squint, 12 attended with 7 (58.3%) being deemed normal on initial screening.

Conclusions: Inappropriate and unnecessary referrals to the community ophthalmic services in the Mid-West of Ireland are creating waiting times which are unacceptable and not conducive to adequate service provision. Children who may have genuine ocular pathology requiring early and aggressive treatment to prevent amblyopia run the risk of 'missing the boat' due to this overrun service. Systems need to be put in place to attempt to free up the service for children requiring treatment. Referral due to the presence of a positive family history of strabismus, in the absence of any other clues as to the actual presence of strabismus, is not appropriate and should be discouraged. In addition further training is required for community health workers in terms of vision and squint assessment in order to reduce the number of children referred with defective vision or strabismus who end up being normal.

Sports- Related Retinal Trauma; Is There More to the Story?

Duignan E, Kilmartin D.
Royal Victoria Eye and Ear Hospital, Dublin 2

We present the case of a 14 year old boy who attended the eye casualty in April 2011 with decreased vision in the right eye after blunt trauma from a football 5 months previous. Vision in the right eye was PL. He was found to have a total retinal detachment with substantial PVR. Retinal vessels were noted to be dilated. B scan ultrasonography, orbital xray and MRI were carried out to outrule malignant disease. On further questioning, the patient complained of intermittent blurred vision prior to the traumatic event. The detachment was deemed inoperable and the patient was advised to avoid contact sports and to wear polycarbonate lenses to protect the remaining eye.

Almost two years later, in January 2013, the patient presented again to the eye casualty after blunt trauma to the left eye from a basketball 2 hours previous. Vision in the left eye was CF. Examination revealed extensive subretinal haemorrhage over the macula with breakthrough vitreous haemorrhage. A staff opinion was sought and the decision was made to perform early vitrectomy with removal of haemorrhage, endolaser and intravitreal Bevacizumab. Inferior retinal telangiectasia was noted intraoperatively. Two further Bevacizumab injections were given intravitreally over the following months.

The patient was diagnosed with Coat's disease and has responded well to therapy. Most recent visual acuity recorded in the left eye is 6/6.

Conclusion: Trauma can be a misleading factor in childhood retinal disease. Careful history and examination are vital to ensure underlying pathology is correctly identified. Treatment of Coat's disease with laser photocoagulation and anti-VEGF agents can halt progression of disease.

Analysis of Retinal Vessels' Diameters in Patients with Alzheimer's Dementia

Dyer H, McCague W, Williams M, Silvestri V, Craig D, Passmore P, Silvestri G
Belfast Health and Social Care Trust and Queen's University Belfast.

Objectives: The aim of this study is to compare retinal vascular diameters and tortuosity in a large sample consisting of two cohorts, one of patients with AD and another of cognitively normal controls. The above is based on the postulation that retinal vascular changes could be identified in AD, this may have value both for understanding of aetiology, and perhaps for early diagnosis of AD.

Methods: This was a prospective case-control study, comparing cases with AD to cognitively normal controls. All recruitment and testing was performed by one investigator (MW). An opportunistic recruitment strategy was used. Potential cases with AD were identified in a nonsystematic fashion, as they appeared in clinic or files, from the population of those with a diagnosis of AD, made by a senior clinician using NINCDS criteria, attending a hospital memory clinic.

Results: There was no significant difference in any vessel's mean diameters or tortuosities between members of pairs of AD cases and controls, matched for age and gender, except for mean diameter of the inferonasal artery (smaller diameter in controls) and tortuosity of the superonasal vein

Conclusions: Clearly the retina is easier to examine clinically than the brain. As a result, identifying retinal changes in AD may not only aid our understanding of the condition, but also potentially, as part of a battery of tests, allow identification of AD or those at risk of AD before significant cognitive difficulties emerge, as in the mild cognitive impairment stage. However, our results suggest that neither retinal vascular diameter nor tortuosity is useful predictors of AD.

Optimisation of Pain Management in Anti-angiogenic Intravitreal Injection of Patients with Age Related Macular Degeneration

Dyer H, Chacravarthy U, Silvestri G
Belfast Health and Social Care Trust and Queen's University Belfast.

Objectives: 1) To investigate and underpin a wide range of factors and practices that can be of importance in minimising pain degree, perceived by AMD patients undergoing antiangiogenic intravitreal injections.
2) To optimise pain management protocol for AMD patients undergoing antiangiogenic therapy that is administered via intravitreal route (injection).
3) To evaluate current practice in pain management for patients undergoing intravitreal injections of an anti angiogenic agent at the macular service clinic in Royal Victoria Hospital.
4) Analyse factors that may influence pain perception among patients and treating Ophthalmologists.
5) Issue recommendations based on the audit outcome for optimising pain management practices as per best available clinical evidence and guidelines.

Methods: audit questionnaire has been designed to cover important aspects of pain management protocol as issued by the Royal College of Ophthalmologists, with sections to be completed by the doctor in relation to procedural details and another to be completed by the patient undergoing the IVT. The questionnaires assess the patient's experience with regards to pain during the intravitreal injection and compare this against different injection techniques. The target sample was 100 patients. In total, 118 patients are questioned, 62% of them were male compared to 38% female patients. A Visual Scale Analogue has been adopted to assess pain severity or relief following ocular procedures to be completed by the patient immediately after IVT injection, on the other hand the Wong-Baker FACES pain scale that is widely adopted by Paediatricians; is used to be completed by the treating doctor to gauge his/her perception of patient's discomfort at time of the injection (courtesy of Gary L. Yauet al; 2011).

Results: majority of patients (55%) have experienced some kind of discomfort at the time of injection only (Figure 3), which is successfully perceived by the injecting doctor in 56% of cases (Figure 4). IVT at the Fairview Clinic is largely pain free (31% of cases reported no pain at all) compared to 14% (annoying sensation) and 21% described it as uncomfortable.
The relationship between pain killers regular intake and pain perception is inverse (37% of patients who take analgesia for other reasons felt no pain at all). However, feeling pain at the time of injection has been completely obliterated when only when topical anaesthetic is left for 5 minutes or more in 100% of cases, compared to 20.5% of cases who perceived no pain when injection is given almost immediately following the administration of the numbing agent (Oxybuprocaine HCL). There are other factors that seem to influence, to some degree, the perception of pain intensity such as technique of injection (deep and quick is less painful than deep and slow), and needle

size (medium bore 30 g is less painful than narrow bore 32 g). Finally, subjective improvement in visual acuity and response to treatment seem to have a positive effect in enhancing pain tolerance and compliance to attend future sessions.

Conclusions: The practice of IVT in the Fairview Clinic has largely adhered to the spirit of guidelines issued by the Royal College of Ophthalmologists. IVT procedure is minimally painful with high satisfaction rate among service users (AMD patients). Similarly, doctors are able to acknowledge a patient discomfort at a level proximate to that stated by this particular patient in most instances. Nevertheless, our findings shed the light on certain aspects that can be further improved upon to achieve optimum comfort for the patients with the subsequent positive impact on compliance. Such points may include leaving the anaesthetic agent longer to take effect (average 3-5 minutes) as the findings suggest that in majority of cases, the contemplation of injection happened almost immediately after administering the numbing agent. Adding to that, a medium bore needle (30 g) with a quick & deep injecting technique may also help reduce the discomfort at the time of stabbing. Equally, full explanation and reassurance even for those patients who had the procedure more than once in the past appears to be understandably beneficial in allaying patients' anxieties about the procedure and hitherto ameliorate their pain perception.

Unexplained No perception of Light Following Intravitreal Anti_VEGF Injection

Fauzi FM[1], Pokrovskaya O[2], O'Reilly P[2], Horgan N[1]
[1]Vincent's Hospital, Dublin [2]Mid-Western Regional Hospital, Limerick

Objectives: The authors describe 2 cases of 'no perception of light' (NPL) visual loss following intravitreal anti-VEGF injection.

Methods: The clinical records and investigations (including imaging and electrophysiology studies) are reviewed.

Results: Intravitreal injection has become a commonplace ophthalmic procedure, with the most significant potential complication being endophthalmitis (0.1% incidence). Immediate vision loss can occur, and is usually caused by immediate rise in intraocular pressure (IOP), with ophthalmoscopic evidence of central retinal artery (CRA) pulsation. Immediate paracentesis is usually effective in lowering IOP and restoring CRA perfusion.

In the two cases reported, with immediate onset of NPL vision following intravitreal injection of 0.05ml anti-VEGF, there was no evidence of CRA pulsation, and tonometry confirmed normal intraocular pressure within minutes of injection.

Conclusion: Differential diagnosis, investigation results and final visual outcomes in these 2 cases may offer useful insights to clinicians who may encounter this scenario in the future. Immediate paracentesis remains the 1st step in dealing with 'NPL' vision immediately post intravitreal injection.

A Clinical Audit of Conjunctival Melanoma in the Royal Victoria Eye and Ear Hospital

Goetz R K, Lee P, Moriarty P, Kennedy S, Horgan N
Royal Victoria Eye and Ear Hospital, Dublin

Objectives: To report an audit of the treatment of conjunctival melanomas at The Royal Victoria Eye and Ear Hospital Dublin (RVEEH)

Methods: All patients with a diagnosis of conjunctival melanoma who attended the RVEEH over the years 2006 – 2013 were included. 50% were initially treated at the RVEEH and 50% underwent initial treatment elsewhere and attended RVEEH for further management.

Results: The male to female ratio was 1:1. All tumours were treated with surgical excision, 88% also had double freeze-thaw cryotherapy, 25% had amniotic membrane graft and 75% received adjunctive topical mitomycin C (MMC). No patient had regional or distant metastatic disease at the time of initial evaluation. Greater initial tumour thickness and extent were significantly associated with risk of local recurrence (which occurred in 2 patients). There was no case of melanoma-related death in this patient cohort.

Conclusions: Surgical excision combined with double freeze-thaw cryotherapy and adjunctive MMC topical chemotherapy achieved good success rates in the management of conjunctival melanoma. Appropriate initial surgical intervention can reduce the risk of disease recurrence.

Review of National Intracranial Germinoma Cases from 1982 – 2012

Hartnett C, Brosnahan D, Capra M, Pears J, O'Sullivan C.
Ophthalmology Department, Our Ladys' Children Hospital Crumlin, Dublin

Objectives: To carry out a retrospective review of all cases of intracranial germ cell tumours that have been treated in Our Ladys' Children Hospital Crumlin and to describe the varying presentations, signs & symptoms, treatment options, co-morbidities and survival rates. An emphysis will be placed on the ophthalmological signs and symptoms.

Methods: An internal confidential data management search in the OLCHC database for "Intracranial, Germ cell tumour" was performed. A comprehensive review of all charts was performed noting the following: age at presentation, sex of child, presenting symptoms, presenting signs, location of tumour, secreting or non-secreting tumour, treatment, co-morbidities, outcomes, survival rates.

Results: 27 cases of Intracranial Germinomas were identified from 1982 to 2012. 19 (70%) were males and 8 were females. The mean age at presentation was 10.5 years (0.5 years to 16 years. Presenting symptoms included visual symptoms in 18 cases (66.6%) with ophthalmologists identifying the intracranial tumour in 9 cases (33.3%). Presenting visual symptoms include blurred vision (74%), diplopia (59%), inability to move eyes (7%). Non-ocular presenting symptoms included headaches, vomiting, lack of energy / lethargy, diabetes insipidus, neck pain. The location of the tumour was pineal gland (55.5%), Suprsellar (18.5%), 3rd Ventricle (18.5%),Frontal lobe (7%). Treatment is with either craniospinal radiotherapy only or chemotherapy courses according to the Carbo-PEI protocol followed by a course of whole brain ventricular radiotherpy. Co-morbidities include Diabetes insipidus (59%), hypothyroidisim (78%), hypopituitarism (78%), obstructive hydrocephelus (30%). 5 deaths were recorded. Survival rate of 81.5%.

Conclusions: Germinomas account for 3 - 5% of all paediatric intracranial tumours. Visual symptoms are a common presenting feature of Intracranial germinomas. Many of these cases were diagnosed following ophthalmological review who ordered CT / MRI brains based on the signs/symptoms/findings. This case series review highlights the importance of neuropathological ophthalmology examinations in children who complain of visual symptoms such as blurred vision and diplopia.

Long Term Follow Up of newborns with Hypoxic Ischaemic Encephalopathy; Biometric and Refractive Data in Early Childhood

James M[1], O' Connor G[1], Haskins B [2], Boylan G[1], Cullinane A[2], Murray D[1]
1. University College Cork 2. Cork University Hospital

Objectives: To investigate the functional and structural impact of hypoxic ischaemic encephalopathy (HIE) on childhood visual development.

Methods: A prospective study of visual, refractive, and ocular biometry measurements in 34 children, aged between 3 and 6 years, and previously diagnosed with HIE is reported, with particular attention directed towards axial length (AL) measurements with the IOLMaster. Stata 8 statistical software was used to analyze the data, and determine whether there was any correlation between AL measurements and the severity of HIE grade.

Results: The severity of HIE grade was determined to be mild, moderate, or severe in 19 (55.9%), 14 (41.2%), and 1 (2.9%) cases, respectively. A best corrected visual acuity (BCVA) of 6/6 or better was found in at least 1 eye of each child in 31 (91.2%) cases. Six children (17.1%) had evidence of a squint. The mean (± SD) spherical equivalent (SE) refractive error was +1.78 (± 1.69) D for right and +1.75 (± 1.41) D for left eyes (ranging from -0.625 D to +7.25 D). Mean (± SD) AL was 22.05 (± 0.79) mm. There was no correlation found between AL and severity of HIE grade (r = -0.07).

Conclusions: The rate of visual impairment in our cohort of children with HIE was low, although there was an increased incidence of squint and refractive error. The mean AL was similar to what would be expected in a healthy population, and showed no correlation with HIE grade.

Recruitment of Bone Marrow-Derived Stem Cells to the Retinal Pigment Epithelium after Laser Injury

Kent D [1], Yu L [2], Sheridan CM [2], Li Calzi S [3], Caballero S [3], Grant MB [3]
[1]The Vision Clinic, Kilkenny, Ireland; [2]Dept of Eye and Vision Science, University of Liverpool, Liverpool, UK; [3]Pharmacology and Therapeutics, University of Florida, Gainesville, Florida, USA.

Objectives: Hematopoietic stem cells (HSCs) have a natural ability to home to areas of injury for regeneration. The integrity of retinal pigment epithelium (RPE) is important for the maintenance of a healthy retina. This study investigated the recruitment and distribution of HSCs in the retina in a laser-induced RPE injury model with the specific aim of delivering a sub-lethal injury to the RPE and avoiding rupture of Bruch's membrane.

Methods: Chimeric mice were generated by injection of sca-1^+, c-kit^+ HSCs from green fluorescent protein (gfp) transgenic mice into lethally irradiated wild-type C57BL/6J recipients. The gfp chimeric mice were subjected to a low-intensity laser injury (532-nm diode, 100 milliwatts for 0.1 second) targeted on the RPE layer and then sacrificed at 1, 4, 12, 24 and 48 hours post laser. Their eyes were enucleated, fixed in 4% paraformaldehyde and embedded in paraffin wax for immunohistochemical analysis of gfp expression to determine if there was any recruitment of HSCs to the retina following the sub-lethal RPE injury.

Results: Intense staining of gfp was seen in the retinal ganglion cell layer as early as 1 hour after injury. gfp fluorescence was detected in parts of the inner nuclear layer and outer plexiform layer throughout different time points. However, higher intensity of gfp was found in the RPE and choroid of mice sacrificed at later time points (24 and 48 hours) post laser injury.

Conclusions: This study provides evidence of the potential of bone marrow-derived HSCs to rescue a compromised RPE layer in a time-dependent manner. Immunohistochemical studies of the immune and inflammatory responses are currently underway.

The Effectiveness of Phaemulsification Training Using Dry Lab Methodology

Lee P.
Royal Victoria Eye and Ear Hospital, Dublin

Objectives: To evaluate the effectiveness of pre-training the steps of phacoemulsification on the learning curve of novice surgeons.

Methods: Two novice ophthalmic trainees were taught on the theory and the skills essential for each step of phacoemulsification surgery. The trainees have to attain satisfactory knowledge and skill proficiency level before they were allowed to perform surgery on patient.

Practical skill training took place in ophthalmic theatre where operating microscope, microsurgical instruments and phaco machine were used to train on a model eye. The essential skills involve the use of eye, hands and feet in each step were trained separately until proficiency level has been reached. The final stage involves the trainees to demonstrate satisfactory eye-hand-feet coordination.

Results: Trainee 1: SHO for 9 months. Completed a full case by the 8th patient. He had operated on 30 patients with 15 completed cases. Complication: 1 zonular dehiscence and 1 PC tear.

Trainee 2: SHO for 9 months. Completed a full case by the 4th patient. He had operated on 24 patients with 16 complete cases. Complication: 1 PC tear.

Conclusions: Structured training for phacomulsification using existing surgical environment and instruments is effective in reducing the number of patient required for the learning curve of a novice trainee. It incurs minimal cost yet achieves the most direct transfer of skill from dry lab to operating room.

Orbital T-Cell Lymphoma; a Case Report

McAnena L, Curtin D, Kennedy S
Royal Victoria Eye and Ear Hospital, Dublin

Case Report: A 22-year old man presented to the eye casualty with a 2-week history of rapidly right proptosis and diplopia. Exophthalmometer measured 25mm right, vs. 17mm left eye with restricted right eye movements in upward and lateral gaze. He had no evidence of optic nerve compression. CT and MRI orbits revealed a homogenous 4cm orbital mass, compressing lateral rectus. Urgent open orbital biopsy confirmed a diagnosis of primary orbital T-cell lymphoma. The patient is currently undergoing radio- and chemo-therapy.

We present CT and MRI images with Hess charts and biopsy images for this case

Discussion: Orbital lymphomas represent only 1% of all Non-Hodgkin's Lymphomas and only 6% of all orbital tumours. The majority (80%) arise from B-cells, with 14% and 6% of the T-cell and NK cell subtypes respectively. They are usually indolent, slow-growing tumours affecting people in their 8^{th} and 9^{th} decades. Clinical and imaging data cannot be used to make the diagnosis of orbital lymphoma with certainty. It is imperative to attain tissue biopsy for histopathologic, immunophenotypic, and molecular genetic studies to make accurate diagnostic and prognostic evaluation and to differentiate from other diagnoses such as pseudotumour and meningioma. Radiotherapy is the mainstay of treatment

We present a rare subtype of orbital lymphoma in a young patient for whom urgent open biopsy proved definitive in diagnosis and treatment planning.

The Anterior Chamber Iris-Fixated Intraocular Lens – The Vitreoretinal Surgeon's New Best Friend?

McElnea E[1], Fitzsimons S[2], O'Keefe M[3], Keegan D[1,4]
[1]Ophthalmology Department, Mater Misericordiae University Hospital, Dublin, [2]Ophthalmology Department, Bons Secours Hospital, Dublin, [3]Laser Suite, Mater Private Hospital, Dublin, [4]Institute of Ophthalmology, Mater Misericordiae University Hospital, Dublin.

Introduction: Anterior chamber (AC) iris-fixated intraocular lenses (IOLs) have revolutionised the management of high refractive error and aphakia. The use of these lenses in patient populations often already at risk for retinal detachment (RD) may however present additional challenges in the management of subsequent VR problems.

Methods: We reviewed the case notes of patients who underwent AC iris-fixated IOL placement and VR surgery over the two year period between 2011 and 2012.

Results: The patients identified included those whose initial surgery was for correction of high myopic refractive error, lens subluxation, trauma, posterior capsule (PC) tear with nucleus drop and complex RD. Cystoid macular oedema (CMO), elevated intraocular pressure (IOP) and RD complicated postoperative recovery. VA improved on average by 2 Snellen lines between presentation and last review.

Conclusions: AC iris-fixated IOLs have considerably improved our management of aphakia following VR surgery. VR surgery remains possible after such IOL placement. An improvement in VA was achieved by the majority of patients in this series.

An Insight Into Epigenomics

McDonnell F [1], Clark A [2], Hughes E [3], O'Brien CJ [1,3], Wallace DM [1,3]
[1]School of Medicine and Medical Science, University College Dublin, Belfield, Dublin 4, Ireland. [2]North Texas Eye Inst., University North Texas Health Center, Ft. Worth, TX, USA, [3]Dept. of Ophthalmology, Mater Misericordiae University Hospital, Dublin, Ireland.

Objectives: Current treatment for glaucoma focuses on lowering of intraocular pressure (IOP), but despite apparently well-controlled IOP some patients continue to suffer progressive damage. Other possible methods of treatment may include treating the underlying causes of glaucoma, such as epigenetics. Epigenetics refers to heritable changes in gene expression caused by reversible mechanisms (such as methylation or deacetylation) other than changes in the underlying DNA sequence. Local environmental factors such as tissue hypoxia as is present at the optic nerve head in glaucoma are known to result in global epigenetic modifications. The objective of this study is to examine the global epigenetic profiles of glaucomatous (G) LC and TM donor cells in comparison to normal (N) LC and TM donor cells. As epigenetic alterations are reversible, we believe this may offer a novel therapeutic target.

Methods: Immunohistochemistry (IHC) using an antibody against 5-methylcytosine (5-meC) was performed on normal and glaucoma optic nerve head (ONH) sections from human donors. Genomic DNA was extracted from cells and assessed for global DNA methylation. Whole cell lysates from cells were examined for total HDAC activity. Total RNA was extracted from cells and reverse transcribed to cDNA. Quantitative real-time PCR was performed for DNA methyltransferases (DNMTs) 1 and 3A, Histone deacetylases (HDACs) 2 and 3. Expression of fibrosis-associated genes such as Ras protein activator like-1 (RASAL1), α-smooth muscle actin (αSMA) and transforming growth factor-β (TGFβ) were also analysed in these cells.

Results: The IHC data shows more positive staining for 5-meC in the normal ONH section than in the glaucoma ONH section. Analysis of global DNA methylation showed different levels of methylation in each of the donors. Examination of total HDAC activity showed different levels of HDAC activity in each of the LC and TM donors. When we examined some of the enzymes responsible for the global states we found that similarly, each donor had a different level of expression, however, there is a significant difference between each glaucoma donor compared to the normal donors ($P<0.05$).

Conclusions: These data support our hypothesis that aberrant epigenetic modification occurs in human optic nerve head LC cells and TM cells in glaucoma, as illustrated by global and qPCR results. As epigenetic changes have been shown to lead to a more fibrotic phenotype in other diseases we believe that the alterations shown may indicate a reversible mechanism involved in the progression of the disease. This offers a potential therapeutic approach using available epigenetic inhibitors.

Orbital inflammation following Intravenous Bisphosphonate

McGuire M, Dervan E, Cassidy L
Royal Victoria Eye and Ear Hospital, Dublin

Objectives: We report a case of orbital inflammation following bisphosphonate use and a review of the literature

Methods: A case report of a patient presenting with severe orbital inflammation following intravenous Zoledronic acid for the treatment of osteolytic bone metastasis from skin melanoma.

Results: A 64 year old gentleman presented 3 days after intravenous infusion of Zoledronic acid with a painful protruding left eye and diplopia. His best corrected visual acuity was 6/7.5 in the right and 6/12 in the left. There was no RAPD or red desaturation. He had significant proptosis, chemosis and limitation of extraocular movement of the left side and mild anterior chamber inflammation in both eyes. A MRI brain and orbits showed diffuse infiltrative process involving the left orbital cavity consistent with an inflammatory process with possibilty of compression of the optic nerve and superior ophthalmic vein. A CT sinus confirmed the infiltration of the fat of the left orbital cavity with no other clinically significant findings. He responded rapidily to intramuscular diclofenac. This rapid response to non-steroidal anti-inflammatories has not been published before.

Conclusions: The use of bisphosphonate use is increasing considerably worldwide. It is of upmost importance that physicians and ophthalmologists should be aware of the rare but dangerous potential for orbital inflammation when prescribing bisphosphonates, regardless of their indication for use.

Spontaneous Resolution of Child hood Idiopathic Orbital Inflammatory Disease

McGuire M, McAleer T, Brosnahan D, Pears J, Horgan N
Royal Victoria Eye and Ear Hospital, Dublin

Objectives: Idiopathic orbital inflammation accounts for 4.7%-6.3% of orbital disorders but its incidence in children is very rare, with 70 published case reports worldwide. We report a further case of childhood idiopathic orbital inflammatory disease.

Methods: A case report of a previously healthy 8-year old boy who presented with left eyelid oedema, mild left conjunctival injection with almost complete left external ophthalmoplegia. Fundoscopy showed left papillitis. Visual acuity and colour vision were normal.

Full blood count demonstrated mild eosinophilia and a mild thrombocytosis. Other blood tests were within normal parameters. MRI orbits with IV contrast was consistent with a diffuse inflammatory process.

Results: The patient was admitted for observation for 2 days and then reviewed frequently in the outpatient department. No treatment was given. In the ensuing four-month period, he recovered full range of extraocular movements and the papillitis resolved fully. . Findings remained normal over the following 12 months.

Conclusions: Idiopathic orbital inflammation should be included in the differential diagnosis of diplopia and proptosis in childhood, but must be a diagnosis of exclusion. Biopsy is not advocated, unless absolutely necessary, due to likelihood of residual dysfunction and systemic steroids should be reserved for those with marked disimprovement of symptoms.

A Case Series of Ocular Injuries Sustained by Hurling Coaches without Protective Head Wear

McNally O, Chamney S, Murphy M.
Belfast Health and Social Care Trust

Objectives: In January 2010 the GAA introduced new regulations making the wearing of helmets with faceguards during training and matches compulsory for senior hurling players. These regulations were already in place at minor and under-21 level. It is not mandatory for coaches to wear the same protective head gear. The objective of this small case series was to report ocular injuries sustained by hurling coaches during either training or competitive play and follow these patients up to assess any long term visual consequences.

Methods: Case notes of patients presenting to the Regional Acute Eye Service in Royal Victoria Hospital Belfast for treatment following ocular injury during a Hurling match were reviewed. Patients had baseline best corrected visual acuity measured (BCVA), full ocular examination by slit biomicroscopy, dilated fundal examination and IOP measurement with Goldmann Applanation tonometry.

Results: Three patients, all Hurling coaches, sustained a variety of ocular injuries during training sessions or competitive play. Injuries included corneal abrasion, hyphaema with mildly elevated intraocular pressure and commotion retinae. All patients were treated with appropriate topical medications and subsequently reviewed to ensure their injuries were healing. All three patients recovered completely and regained vision of 6/6 or 6/9. There have been no serious sequelae, such as retinal detachment, to date.

Conclusions: The new regulations making it compulsory for all levels of player to wear a helmet with a faceguard will undoubtedly reduce the number of ocular and facial injuries sustained. This case series illustrates that those training players are however, still at risk of injury. The injuries sustained by players are reported in the GAA's annual report. There is very little statistical evidence on the numbers of coaches injured.

Aberrant MicroRNA Expression in Acute Anterior Uveitis

O'Rourke M[1], Connolly M[2], Fearon U[2], Murphy CC[1].
1 Department of Ophthalmology, Royal College of Surgeons Ireland and Royal Victoria Eye and Ear Hospital, Dublin & 2 Rheumatology Research Group, Dublin Academic Medical Centre, St. Vincent's University Hospital, Elm Park, Dublin.

Objectives: Acute Anterior Uveitis (AAU) is the most common intraocular inflammatory disease. Toll like Receptors (TLRs) are phylogeneticaly conserved receptors that play a key role in the innate immune system by functioning as pattern-recognition receptors. TLRs have recently been implicated in the pathogenesis of non-infectious, immune-mediated AAU. It is now evident that these processes can be altered by a class of small non-coding RNAs or microRNA (miRNA) which exert their biological function through suppression of their target genes, abnormal expression of which has been demonstrated in chronic inflammatory diseases.

Objectives: The aim of this study was to identify altered expression of specific microRNA and examine the effect of TLR activation on miRNA expression in patients with AAU.

Methods: Consecutive patients with AAU attending the casualty department at the RVEEH were recruited following ethical approval. Peripheral blood mononuclear cells (PBMC) were isolated from AAU (n=10) and healthy control (HC) (n=5) individuals, and utilized for miRNA isolation or culture. Total RNA was isolated using the miRneasy miRNA isolation kit. Five candidate miRNAs were selected based on a 350 miRNAs screen, specifically miRNA-146a, miRNA-155, miRNA-323, miRNA-125a-3p and miRNA-125a-5p. Quantification of miRNA expression was analyzed by real-time PCR, using miRNA-let-7a as an endogenous control. The effects of TLR activation and pro-inflammatory stimuli were examined by culturing PBMCs (n=5) with Pam3CSK4 (1µg/ml), poly I:C (25µg/ml), LPS (1µg/ml), IL-1β (10ng/ml) and TNFα (10ng/ml). miRNA expression was analyzed by Real-time PCR and IL-6 cytokine expression by ELISA.

Results: Expression of miR-146a, miR-155 and miR-125a-3p was significantly higher in AAU compared to HC ($p<0.01$, $p<0.01$, $p<0.05$ respectively). No difference in miR-323 and miR-125a-5p expression between the two groups was observed. Pam3CSK4, TNF· and IL-1· significantly induced miR-146a ($p<0.05$), and Pam3CSK4 and TNF· significantly induced miR-155 ($p<0.05$), This was paralleled by a significant induction of IL-6 in cultured supernatants ($p<0.05$).

Conclusions: Our data provides the first evidence of altered microRNA expression in patients with AAU, specifically miRNA-146a, miRNA-155 and miRNA-125a-3p. Furthermore our data suggests that these specific miRNA may contribute to the pathogenesis of AAU by mediating TLR2 activated pro-inflammatory pathways.

Bioinformatic Re-analysis of Gene Expression Microarray Data from Uveal Melanoma

Ramasamay P, Doolan P, Horgan N, Murphy C,Clynes M, Meleady P & Kennedy S.
1. Royal Victoria Eye and Ear Hospital, Dublin. 2. National Institute of Cellular Biotechnology, Dublin

Objectives: Uveal melanoma (UM) is the most common primary intraocular malignancy in adults with an incidence of 5-7 per million per year. Despite successful treatment of the primary tumour, 50% of patients develop metastatic disease. Tumours with chromosome 3 monosomy will nearly exclusively develop metastatic disease. The objective of this study is to identify differentially expressed genes between non-aggressive and aggressive uveal melanoma.

Methods: Gene expression microarray and comparative genomic hybridization microarray data published by Laurent et al (Cancer Res. 2011 Feb 1;71(3):666-74) were re-analysed. Of the 63 samples used in that study, data with confounding factors such as samples with chromosome 3 disomy with metastasis and samples with chromosome 3 monosomy but without metastasis were excluded. Outlying samples in principal component analysis were also excluded.

Results: After exclusion of these samples from the original dataset, gene expression of 9 primary UM tissues with chromosome 3 disomy from patients who did not develop metastasis vs. 11 primary UM tissues with chromosome 3 monosomy from patients who did develop metastasis were compared. A minimum fold change of 1.3 and $p<0.05$ were used. 328 genes were downregulated while 351 genes were upregulated. This includes PTP4A3 identified by Laurent et al. Based on the statistical significance, fold change and current literature of these genes, 2 novel targets were selected and are currently being followed-up by immunohistochemistry.

Conclusions: Bioinformatic re-analysis of previously published uveal melanoma gene expression data has identified 2 novel genes that are currently being validated by immunohistochemistry.

A Novel Genetic Mutation for Marfan in a Family with Lens Dislocation

Smolarek-Kasprzak P, Kirwan C, O'Keefe M.
Temple Street Children University Hospital

Objectives: A case presentation of the family with dislocated lenses.

Methods: A 32-year old Nigerian lady presented to eye casualty. She had a 3-week history of intermittent pain and blurring of vision. Eye examination revealed dislocated lens into the anterior chamber. Her son had undergone bilateral lensectomies the previous year. Thorough investigations had been performed which were negative apart from the detection of a novel mutation for marfans which was predicted to be disease causing. Subsequent examination of siblings revealed ectopia lentis in 2 and significant astigmatism and myopia in the remainder.

Results: A novel mutation of the fibrillin-1 gene (FBN-1) was detected

Conclusions: Marfans Syndrome is a connective tissue disorder with ocular, cardiovascular and musculoskeletal manifestations**.** It is important to evaluate patients with lens dislocation even with the absence of typical Marfan's features, and to carry out metabolic and genetic testing. Careful consideration should be given to the possibility of an underlying clotting disorder (homocystinura) or cardiac problems as this will influence both medical and surgical management.

Referral Practice, Presentation and Management of Congenital Nasolacrimal Duct Obstruction in a Single Paediatric Ophthalmology Department

Tevlin R, Lanigan B, Flitcroft I.
Department of Paediatric Ophthalmology, Children's University Hospital, Temple Street, Dublin

Objectives: To determine the current referral practices, presentation and management of congenital nasolacrimal duct obstruction (CNLDO) in a single paediatric ophthalmology department.
*(**Note:** the results below detail only the preliminary results of the study. Further work is ongoing.)*

Methods: Records for probing procedures performed in the Children's University Hospital (CUH) from 2007 to 2012 were examined. A retrospective chart review was then performed of the patients who underwent syringe and probing procedures.

Cases were examined for demographics, referral practice, disease factors and management. Referral practice, including source and age of referral, and laterality of presentation were reviewed. Management practice was recorded including trial of conservative therapy, syringe and probing and if a further procedure was required for successful management. In those cases where intubation was required, method of fixation and duration of intubation was recorded.

Successful probing was defined as parental satisfaction in association with resolution of symptoms.

Results: A total of 69 children were identified from hospital record who proceeded to syringe and probing for management of CNLDO. The preliminary results detailing the experience of 24 children (15 male, 9 female) are discussed in this abstract, as further review is ongoing.

The mean age at referral was 21 months (median 15 months, range 6-110 months). The cases were referred from general practitioners (52%), community ophthalmologists (35%) and paediatricians (13%). Bilateral obstruction was clinically indicated in 7 cases (29%).

Following first review by ophthalmology in CUH, a conservative approach was adopted in 4 cases (3 of whom were all ≤8 months), while the majority proceeded to syringe and probing (83%). The median age at first syringe and probing was 18 months (range 13-114 months). 10 cases (42%) proceeded to further intervention following initial syringe and probing, 50% undergoing nasolacrimal intubation (with a median tube retention duration of 3 months) and 50% undergoing second syringe and probing. Five patients required a third procedure, all undergoing nasolacrimal intubation.

We plan to continue our review to include all 69 cases who underwent syringe and probing between 2007-2013 and perform further statistical analysis looking for significant trends in the management of CNLDO.

Conclusions: The majority of our cases were referred from general practitioners and unilateral disease was more common. A conservative initial approach was performed in those presenting at less than 12 months of age. Syringe and probing was successful on first attempt in 58%. Approximately one fifth of patients required three procedures until parent satisfaction and resolution of symptoms were achieved. These are preliminary results and we hope that our further review of the index population will reveal significant trends in the presentation and management of CLNDO.

Connective Tissue Growth Factor Induction of Lysyl Oxidase (LOX) Enzyme Expression in Human Trabecular Meshwork Cells is reduced by FG-3019

Wallace D. M. [1,2], Clark A. [3], Crean JK [4] and O'Brien CJ[1,2]
[1]School of Medicine and Medical Science, University College Dublin, Dublin [2]Dept. of Ophthalmology, Mater Misericordiae University Hospital, Dublin [3]North Texas Eye Inst., University North Texas Health Center, Ft. Worth, [4]School of Biomolecular and Biomedical Science, Conway Inst., University College Dublin, Dublin.

Objectives: The matricellular protein Connective Tissue Growth Factor (CTGF) has been shown to play an integral role in extracellular matrix (ECM) deposition in trabecular meshwork (TM) cells in glaucoma. Our group and others have also shown levels of CTGF to be elevated in the aqueous humour of glaucoma patients compared to cataract controls. Furthermore, we have previously described a role for anti-CTGF immunotherapy (FG-3019, FibroGen Inc. USA) in combating glaucoma-associated fibrosis in *in vitro* models of glaucoma. Lysyl Oxidase (LOX) enzymes are an important class of ECM cross-linking enzymes involved in the pathogenesis of glaucoma with identified single nucleotide polymorphisms (SNP) in LOXL-1 associated with an increased risk of developing pseudoexfoliation glaucoma. The purpose of this study was to firstly investigate if CTGF induced expression of LOX enzymes in human TM cells and whether pre-treatment with FG-3019 could decrease LOX expression and therefore be an attractive therapeutic approach for the treatment of glaucoma.

Methods: TM cells from a normal donor (NTM) were grown to confluence and placed in serum free media for 24 hours prior to treatment with a recombinant fragment of CTGF (25ng/ml for 24hours). Q-PCR using gene specific exon-exon spanning primers or specific probe was used to determine gene expression. NTM cells were then cultured in the presence or absence of the therapeutic, humanized monoclonal anti-CTGF antibody FG-3019 (10μg/ml) prior to treatment with CTGF as described above. The modulatory effect of FG-3019 (10μg/ml) was assessed and IgG (10μg/ml) was included as a control. LOX and LOXL gene (1-4) expression were determined by quantitative PCR using gene specific exon-exon spanning primers and / or specific probes. The equation $2^{\Delta\Delta cT}$ was used to derive a fold difference for gene expression.

Results: Treatment of NTM cells with CTGF induces a significant ($P<0.05$) increase in the expression of LOX & LOXL 1-4 compared to untreated cells. Pre-treatment of NTM cells with FG-3019 significantly reduces ($P<0.01$) the CTGF-induced expression of all LOX enzymes.

Conclusions: CTGF can drive the expression of the ECM cross-linking LOX enzymes in NTM cells. The anti-CTGF antibody FG-3019 is effective in reducing LOX production. These observed anti-fibrotic effects support a pathologically significant role for the use of anti-CTGF immunotherapy as a possible approach for treatment of glaucoma.

Past Presidents

2009 – 2011; Mr Paul Moriarty

2007 – 2009; Mr Peter Tormey

2005 – 2007; Mr. Robert Acheson

2003 -2005; Prof. Philip Cleary

2001-2003; Mr. Brendan Young

1999-2001; Professor Louis Collum

1997-1999; Mr. Roger Bowell

1995-1997; Mr. John Nolan

1993-1995; Professor Peter Eustace

1991-1993; Mr. Stewart Johnston

PAST HONORARY LECTURES AND MEDAL WINNERS

Montgomery Lectures and Lecturers

Royal College of Surgeons in Ireland
2001 "Pathogenesis of Glautomatous Damage"
J. Flammer, (Basle)
2002 "What's new in Ocular Tumours and Pseudotumours?"
Dr. Jerry A. Shields (Philadelphia)
2003 "Advances in the Diagnosis & Management Carotid-Cavernous Sinus Fistulas"
Prof. Neil Miller (Baltimore)
2004 "Age – related maculopathy: New aspects of pathogenesis, prevention and treatment" Prof. Peter Wiedemann (Leipzig)
2005 "Biological Treatments of AMD"
Prof. Alan Bird (London)

University of Dublin, Trinity College
2006 "Developmental Eyelid Abnormalities"
Mr Richard Collin(London)
2007 "Is there any Room for Surgery in AMD Treatment now?'
Prof Dr Bernd Kirchhof (Dusseldorf)
2008 'Normal tension Glaucoma-does it exist?
Prof Roger Hitchings (London)
2009 "Practical Thoughts on how we Doctors can Best Help our Patients, Ourselves and the World"
Dr Geroge Spaeth (Philadelphia)
2010 The Lecture was not held due to the untimely death of Mr John Lee

Royal College of Surgeons in Ireland
2011 "Novel Therapeutic Approaches for Diabetic Retinopathy"
Prof Loyd Paul Aiello (Boston)
2012 "Endothelial keratoplasty: DMEK or DMET - what if Fuchs endothelial dystrophy does not exist?"
Dr Gerrit Melles (Amsterdam)

Mooney Lecture and Lecturers

2002 "What is Neuro-Ophthalmology"
Professor Peter Eustace, (Dublin)
2003 "Worldwide Eye Disease – It's Prevention and Treatment"
Professor Gordon Johnson
2004 "The Twist and Turn of Macular Surgery"
Mr. David Wong (Liverpool)
2005 "Challenging Cases and the Management of Complication during Cataract Surgery"
Mr. Robert Osher (Cincinnati)
2006 "Reconstruction of the Anterior Segment"
Mr Bruce Noble (Yorkshire)
2007 "Wavefront-Guided Refractive Surgery: Advances and Impediments"
Dr Dimitri Azar (Chicago)
2008 "An Update on Amblyopia"
Prof Gunther von Noorden (Houston)
2009 "Evolving Concepts in Pharmacologic Vitreolysis"
Dr Brooks W. McCuen (North Carolina)
2010 "The Link between Infection and Uveitis"
Prof John Forrester (Aberdeen, Scotland)
2011 "OCT Application in Developing Eyes"
Prof Cindy Toth (North Carolina)
2012 "Retinal Oximetry in Health & Disease"
Prof Einar Steffanson (Reykjavik, Iceland)

Barbara Knox Medal Winners

2002 "Incubation with Endogenous Retinal Antioxidants Inhibits Chemokine Release by PRE in an In-Vitro Model of Age-Related Macular Degeneration"
G.T. Higgins
2003 "Macular Pigment Optical Density and Dietary Intake of Lutein and Zeaxanthin in Healthy Subjects"
J. Nolan
2004 "Correlation of Central Corneal Thickness with vascular risk factors in Normal Tension Glaucoma"
A. Doyle
2005 "A Randomized Placebo Controlled Double-Masked Phase 3 Study of the Treatment of Subfoveal Predominantly Occult Choroidal Neovascularization (CNV) Secondary to Age -Related Macular Degeneration (AMD) using Transpupillary Thermotherapy (TTT)"
A. Hogan
2006 "Survivin Expression & Prognostic Significance in Chorodial Melanoma"
C. Cleary
2007 "MRI as a Novel Non-Invasive Method for *In Vivo* Tracking of Endothelial Progenitor Cells in a Model of Choroidal Neovascularisation"
D. Kent
2008 "A Retrospective Study of the Paediatric Practice of one Community Ophthalmologist Over Seventeen Years in Cavan"
A. Blake
2009 "The Effects Of Acute Cigarette Smoke Exposure on Retinal Pigment Epithelial Cells (Arpe-19)"
S. Ni Dhughbhaill
2010 "Epidemiology And Clinical Associations Of Primary Retinal Detachment In Scotland: 2 Years Of Prospective Recruitment"
D. Mitry
2011 "Prognostic Indicators and Outcome Measures for Surgical Removal of Symptomatic Non-Advanced Cataract"
S. Charlampidou
2012 "Proteomic Research in Uveal Melanoma"
P. Ramasamay

2000 "The Effects Of Topical Anti-Glaucoma Medications On The Ciliary And Optic Nerve Head Arterioles In The Rat Eye"
S. Byrne
2001 "Ocular Toxoplamosis-Pathogenesis Revisited".
H. McLoone
2002 "Gene Expression in Diabetic Reinopathy"
R. Kane
2003 "Exposure of Photoreceptor Outer Segments to Blue Light Induces a Pro-Angiogentic Response from the Retinal Pigment Epithelium"
E. Cosgrave
2004 "Investigation and Management of Epidemic Intraocular Lens Opacifcation"
R Altaie
2005 "The Photopic and Scotopic Visual Thresholds in Eyes with Solar Retinopathy: a Comparison with the Anatomical Damage"
L O'Toole
2006 "The Role of Sonic Hedgehog Protein in Ethanol-Induced Ocular Teratogenesis"
K. Kennelly
2007 "Visual Outcomes and Graft Survival following Corneal Transplants: the need for an Irish National Corneal Transplant Registry"
M Guerin
2008 "Age Dependent Rat Retinal Ganglion Cell (Rgc) Susceptibility To Apoptotic Stimuli: Implications For Glaucoma Research
M Guerin
2009 "A Cellular Model of Fuchs' Endothelial Dystophy"
C Kelliher
2010 "Prediction of Effective Lens Position Using A Method Independent Of Preoperative Keratometry Readings"
I. Dooley
2011 "Genomic Medicine and Stargardt Disease "
D. Armstrong
2012 "Childhood Craniopharyngiomas; the Irish Experience"
L. McAnena

IRISH COLLEGE OF OPHTHALMOLOGISTS

The Irish College of Ophthalmologists (ICO) is the professional body for eye doctors in Ireland. The College is responsible for setting and maintaining the highest standards in ophthalmic training for doctors specialising in the field and for continuing medical education and professional development for those in practice. The ICO is recognised by the Medical Council as the only post graduate training body for Ophthalmology. The provision of best in class specialist education and training in ophthalmology is key to the enhancement of the College's role as the professional body for eye doctors in Ireland.

The central goal of the ICO is to maintain standards of excellence for the maintenance and restoration of vision and the preservation of sight through the education of its members, trainees and the public. This is achieved by setting and maintaining the highest standards in ophthalmic training for doctors specialising in the field and for continuing medical education and professional development for those in practice. The mission of the ICO is to reduce the number of annual cases of preventable blindness and vision impairment, to maintain vision and to extend and prolong, to the greatest extent possible, the length of time those who have vision impairment can continue to live independently.

The ICO is focused on its strong leadership role, providing accurate medical information to the public and policy guidance to the government. The ICO is dedicated to working with all relevant parties on the most appropriate model of care for Ireland based on excellence in medical care and patient safety. The College has long standing relationships and strong interaction with a broad range of both government and non- government institutions across healthcare planning, regulation and delivery through which it both promotes and supports the specialist training and education agenda.

The College aims to guarantee the highest standards of patient safety by ensuring that there is an agreed patient pathway in eye care. Through the Forum of Postgraduate Medical Training Bodies the College has supported the development of the clinical directorates and programme model which are a joint initiative between the HSE and the postgraduate training bodies. To demonstrate that commitment the College is funding the research under pinning the national programme for eye care as it evaluates present services in Ireland. The programme aims to deliver changes that will improve the current system in hospital and community care services, ensuring prompt detection, diagnosis and treatment.

As the expert body on eye care in Ireland the ICO takes a broad view on the delivery of care including treatment, diagnosis, prevention, patient safety, quality and cost of care. College policy is fully aligned with the transformation programme for the health services, in particular the concept of patients receiving treatment from the appropriate personnel, in the appropriate location, in a timely manner.

Formed in 1991, the College celebrated its 21st Anniversary in 2012.
"Eye Doctors of Ireland, protecting your vision"

For further information, visit www.eyedoctors.ie