



**Irish College of
Ophthalmologists**

**Yearbook 2017-2018
Annual Conference**

**THE KILKENNY CONVENTION CENTRE,
LYRATH HOTEL, CO. KILKENNY**

May 16th - 18th 2018



Irish College of
Ophthalmologists
Eye Doctors of Ireland
Protecting your Vision

Irish College of Ophthalmologists

Yearbook 2017-2018

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Letter from the President

Dear Members of College,

You are all very welcome to the Irish College of Ophthalmologists Annual Conference in Kilkenny, where we celebrate 100 years of Irish Ophthalmological Societies.

The programme of symposia, workshops and papers will cover a broad range of topics pertinent to Ophthalmology in 2018. I am happy to welcome colleagues from the USA and the UK, as well as local speakers who will share their knowledge and expertise with us on subjects as diverse as the psychogenic disorders in neuro-ophthalmology to the relationship between uveitis and systemic disease.

In particular I thank Cynthia Bradford, Past President of the American Academy of Ophthalmology, who will give the Mooney Lecture on The Challenge of Cataract Surgery and Michael Burdon, President of the Royal College of Ophthalmologists, who have many commitments at home, but who have travelled to join us in celebration of 100 years and to look forward with us, to the next 100 years of Irish Ophthalmology.

Thank you to the Council, Committee Chairs and members for your commitment of time and energy for the good of Irish Ophthalmology. I encourage any members who may be considering a nomination, to please engage with the College. The role of Council and the work of our Committees are fundamental to the successful functioning of the College, and to our growth and expansion as we look to the future. I encourage trainees and young ophthalmologists to ensure their voices are heard through this forum. In particular, I would like to thank Mark Guerin and Susan Kelly who leave Council at this meeting.

Special thanks must also be extended to Billy Power in his role as Clinical Lead for Ophthalmology and to Yvonne Delaney as College Dean.

The College has strong links with overseas Colleges and Societies and I thank Pat Logan (SOE) Denise Curtin and Deirdre Townley (UEMS and EBO) for their representation and contribution on our behalf.

During this year we will welcome the Society of European Ophthalmology (SOE) Board to Dublin where Pat Logan will host their Board meeting in June, and the British Oculoplastics Surgery Society Annual Meeting which also takes in June and will be hosted by Gerry Fahy and Tim Fulcher.

Congratulations to our younger colleagues who have achieved many honours nationally and internationally. The ICO has been invited to deliver a symposium jointly with the Portuguese Ophthalmic Society at the World Ophthalmic Congress in Barcelona in June. Later in our celebratory year, AAO Past President Mike Brennan will give the Montgomery Lecture and the College will host a Gala Dinner at the Royal College of Surgeons in Ireland to mark 100 years.

It is always more difficult to implement a report than to write it and the Primary Eye Care Report is no exception. The work goes on to change how we deliver the best care to our patients in a timely fashion and the many strands of training, professional competence, governance and terms and conditions for Medical Ophthalmologists are ongoing issues for the College. The stand-alone training pathway in Medical Ophthalmology will commence this July to specifically address the growing demand for services and the need to have an integrated model of care between community and acute hospital service, in line with government policy.

These events and achievements would not have been possible without strong administration and our College CEO Siobhan Kelly and staff Ciara, Marion and Niamh deserve our thanks and support.

Enjoy the conference,

Best wishes

Alison Blake

President

Irish College of Ophthalmologists

May 2018



Commemorative Programme of Events 2018

Celebrating 100 Years

IOS 1918 – 2018 ICO

Irish College of Ophthalmologists Annual Conference

Kilkenny Convention Centre, Lyrath Hotel, Kilkenny
16th – 18th May 2018

The European Society of Ophthalmology (SOE) Board Meeting

Royal College of Surgeons in Ireland, Dublin
8th – 10th June 2018

World Ophthalmology Congress 2018

Barcelona

18th – 19th June 2018

The ICO will deliver a joint symposium with the Portuguese Ophthalmic Society at the World Ophthalmology Congress in Barcelona, in June.

Commencement of ICO Medical Ophthalmology Training Programme

July 2018

The new training pathway in Medical Ophthalmology will commence in July 2018 to reflect the changes in the specialty and to facilitate those interested in a career in Medical Ophthalmology to make that choice earlier in their career.

100th Anniversary Celebratory Dinner

Royal College of Surgeons in Ireland, Dublin
16th November 2018

The ICO is delighted to mark the very special occasion in 2018, of the 100th Anniversary of the formation of the first national ophthalmological society, the IOS, with a celebratory dinner for our members and distinguished guests on November 16th at the Royal College of Surgeons in Ireland.

Much has been achieved in this timeframe in our specialty and as we reach this important milestone, it is fitting to both reflect on and look forward to the future direction for ophthalmic care in Ireland.

We look forward to sharing the occasion with colleagues, who will have lived through the healthcare transitions of the passing decades, and been witness to the significant advancements in the treatment of eye diseases for Irish patients.

Join us in the celebration of the evolution of the IOS into the Irish College of Ophthalmologists in 1991. We hope to inspire the future generation of eye specialists through our reflection on all that has been achieved and all that we aspire to achieve in eye care in Ireland.

Montgomery Lecture 2018

Guest Lecturer Mr. Michael W. Brennan

Past President, American Academy of Ophthalmology
16th November 2018

Report of Council 2017-2018

Maureen Hillery, Honorary Secretary

There have been four Council meetings: May 19th 2017, September 16th 2017, November 10th 2017 and February 10th 2018.

The Council Members are: Billy Power, Marie Hickey-Dwyer, Mark Cahill, Alison Blake, Marc Guerin, Gerry Fahy, Susan Kelly, Maureen Hillery, Fiona Kearns, Richard Comer, Ian Dooley, John Doris, Patricia Quinlan and Yvonne Delaney.

All Council members have attended the minimum required number of meetings.

Changes in Council Membership

The Council terms of Marc Guerin and Susan Kelly has concluded. On behalf of all the College members I would like to thank Marc and Susan for their contribution to Council and their commitment to the College Committees. John Doris, Ian Dooley, Marie Hickey Dwyer and Maureen Hillery were appointed to Council in May 2017. The new appointments to Council will be announced at the AGM.

At the close of 2017, the membership for the Irish College of Ophthalmologists stood at 184.

The full audited accounts for the year ended 31st December 2017 have been circulated to all members and will be discussed during the AGM.

Dean's Report

Yvonne Delaney, Dean

Postgraduate Training in Ophthalmology in Ireland.

May 2018 marks an important time in postgraduate training in Ophthalmology in Ireland. The streamlined training programme, introduced in July 2015, is now nearing completion of its first full cycle, whilst July 2018 sees the formal separation of core ophthalmology training in to separate surgical and medical ophthalmology training programmes.

The National Training Programme (NTP) in Ophthalmology

The streamlined training programme had at its core the purpose of redirecting training away from the gap years and back into the 3 years of common core training. As we come to the end of its first full cycle initial analysis suggests that this goal has largely been achieved as evidenced by the acquirement of a very high standard of both clinical and surgical competence by trainees during the three years of their training. This is evidenced by high success rates in the MRCSI (Ophth) exam, enhanced logbooks of phacoemulsification and non-phaco surgeries as well as via feedback from trainers and educational supervisors in the seven national training units. Further strengthening of the programme is still necessary in order to ensure that the BSTs are ready, without the benefit of the gap years, for higher surgical training (HST). The addition of an anterior vitrectomy module to Year 3 of the programme will represent an important new development. Although only in its early stages this module will be delivered throughout 2018 and will encompass both didactic as well as wetlab and simulation components. It will enable trainees to acquire key surgical skills as they transition from basic to higher surgical training.

The new National Training Programme in Medical Ophthalmology

Managing NCHD numbers to generate a future workforce from both the surgical and medical ophthalmology programmes is a priority for the College. The ever-increasing demand for medical ophthalmology services continues unabated and the launch of the new medical ophthalmology programme is an attempt to train and retain a sustainable medical ophthalmology workforce as eye care delivery moves its focus away from the acute hospital setting and into the community.

Medical Career's Day: The reconfigured medical ophthalmology training programme was formally launched in September 2017 at the Career's Day in Dublin Castle. Five successful candidates were selected in February 2018 and are due to enter the medical ophthalmology programme in July 2018.

The success of the new programme is dependent on reconfiguring existing BST jobs or generating new ones in units most suitable for medical training. The College will continue to work closely with all seven National Training Eye Units to resolve potential challenges such as modification of timetables, on-call rotas, funding for posts etc. We believe any short-term difficulties will be offset by the very real and tangible advantages of producing a sustainable medical ophthalmology workforce.

Dual HST intake 2018-2020

The first HST selection of dual intake took place in March 2018 with seven trainees selected to enter higher surgical training in July 2018. Understandably there continues to be significant apprehension regarding progression rates amongst both streamline and gap year trainees. The College is continuing to do its utmost to ensure that the fairest of opportunities are offered to those trainees who are eligible to enter HST. Introducing IMGs and reducing our BST intake for the third year in succession are two strategies that have been pursued in this regard. A temporary increase in HST posts (seven for 2018) has already been successfully negotiated with the NDTP for 2018. A further increase will be necessary to navigate the remaining 2 years of dual entry.

Working together

May I take this opportunity to say an enormous thank you to the trainers and educational supervisors in each unit. Every unit has continued to work alongside the College to deliver the highest levels of training despite operating in a continuing under-resourced environment. In that regard I would like to thank Mr. Ian Flitcroft, Mr. Donal Brosnahan, Ms. Marie Hickey Dwyer, Ms. Deirdre Townley, Ms. Shauna Quinn, Mr. Zubair Idrees and Mr. John Stokes for all their assistance in the last year, not just in their formal capacity as Educational Supervisors but as colleagues whose considered advice I have sought on many occasions. Equally I would like to acknowledge and thank the support given by Mr. Tim Fulcher, Mr. Eamonn O'Connell, Prof. Conor Murphy, Prof. Colm O'Brien and Mr. Gerry Fahy for all their assistance in the last year

I would also like to thank all those who helped on the BST / BMT and HST selection panels both of which required significant amounts of additional work in view of the new medical ophthalmology programme and the implementation of the new scorecard for the streamlined programme. Finally I would like to thank Niamh Coen our new Training Administrator at the College who has made a significant contribution to the new processes that are a necessary part of the implementation of the new training programmes.

Scientific & CME Committee

John Doris, Chairman

Committee Members; Denise Curtin, Geraldine Comer, Eugene Ng.

The ICO Annual Conference 2017 was held in The Slieve Russell Hotel, Co Cavan, May 17th to 19th. The symposia topics included Evolving Concepts in Glaucoma Management, New Developments in Ocular Imaging and Adapting and Leading for Change.

CME & Professional Competence

The ICO continues to administer a Professional Competence Scheme on behalf of the Medical Council and the Committee provides advice in this regard as required. The scheme year runs from May 1 to April 30. ICO members can record their professional competence activity using the web-based PCS ePortfolio which will be reflected in a Statement of Participation issued in May each year.

In addition to completing at least 50 hours of continuing professional development activity per year, each doctor is expected to complete one clinical audit per year. Doctors are required to keep up to date with developments in their field of practice and with clinical guidelines on best practice.

Within the overall requirement of 50 CME credits are the sub categories of external (min 20 points) internal (min 20 points) and personal learning (min 5 points). There is an additional category for research and teaching with credits in this category recommended rather than mandatory.

ICO/Novartis Research Bursary

Dr Rory Murphy was announced as the winner of the ICO/Novartis Eye Research Bursary 2017 at the 9th Annual Retina Meeting in Adare on September 28th, 2017 for his study entitled "Attenuating Fibrosis in the Aged Lamina Cribrosa: The Role of Epigenetics, Mechanotransduction and Biomimetic Modelling."

Dr Murphy's study focuses on preventing sight loss in glaucoma through inhibitors that could offer a novel and completely different therapeutic option in glaucoma management from the current method.

The research is being carried out between the facilities at University College Dublin and The Catherine McAuley Research Centre, Mater Misericordiae University Hospital, under the supervision of Prof. Colm O'Brien, Professor of Ophthalmology.

We congratulate Dr Murphy on receiving this award and look forward to his presentation on an update on his study at the meeting in Kilkenny.

ICO Medals

The winner of the Barbara Knox Medal for Best Paper 2017 was Dr David Brinkman for his presentation on the "Comparing the Effectiveness and Tolerability of Preservative-Free Tafluprost Versus Preserved Latanoprost in the Management of Glaucoma and Ocular Hypertension"

The winner of the Sir William Wilde Medal 2017 for Best Poster was Dr Christine Goodchild for her presentation on the "An Audit of the Quality of Inpatient Referrals Received by the Ophthalmology Consultation Service in a Tertiary Hospital".

Montgomery Lecture

The 2017 Montgomery Lecture was delivered by Prof. Michael O'Keeffe.

The Irish College of Ophthalmologists was honoured to invite Prof. O'Keeffe, Consultant Ophthalmic Surgeon and Newman Clinical Professor of Paediatric Ophthalmology, to deliver the 2017 Montgomery Lecture in recognition of his significant contribution to the specialty and paediatric ophthalmology in particular.

The lecture took place on November 24th, 2017 at the Trinity Biomedical Sciences Institute, Dublin, with an excellent show of attendance by our members following the ICO Annual Meeting earlier that day.

Prof. O'Keeffe's talk entitled "The Evolution of Paediatric Cataract Surgery" discussed classification, surgical technique, complications and recent advances to improve visual outcomes in paediatric cataract surgery.

Mooney Lecture

The 2017 Annual Mooney Lecture was given by Professor Jonathan Crowston, Ringland Anderson Professor of Ophthalmology, University of Melbourne and Managing Director at the Centre for Eye Research in Australia (CERA).

His lecture entitled "Climbing the Glaucoma Mountain – Future Challenges and Opportunities" was presented at the ICO Annual Conference 2017 in the Slieve Russell Hotel in Cavan.

This year we welcome Dr. Cynthia Bradford, Professor of Ophthalmology at the Dean A. McGee Eye Institute/Department of Ophthalmology at the University of Oklahoma Health Sciences Center who will deliver her lecture on "The Challenge of Cataract Surgery".

Medical Ophthalmologists Committee

Fiona Kearns, Chairman

Committee Members: Catherine McCrann, Garry Treacy, Grace O'Malley, Margaret Morgan, John Traynor, Fatima Hamroush, John Smith, Susan Mullaney, Geraldine Comer, Sacha Hutchinson, Joanne Kearney and Loretta Nolan.

The committee met on three occasions during the past year with strong attendance from committee membership; May 18th 2017, November 24th 2017 and January 26th 2018.

Primary Eye Care Service Review

The Primary Care Eye Service Review Report was published on June 28th 2017. The College is continuing to engage with the HSE in seeking a commitment that the necessary funding and resourcing to support the Primary Eye Service will be given. We have no firm commitment yet.

Medical Ophthalmology Contract

The Committee is continuing to engage with the IMO regarding the COP contract negotiations. There have been three meetings with the HSE and our goal is to upgrade our contract. The aim would be a contract equivalent to existing hospital consultants.

Training Programme in Medical Ophthalmology commencing July 2018

A stand-alone training pathway in Medical Ophthalmology will commence in July 2018. The training programme has been developed to specifically address growing demand for medical ophthalmology services and the need to have an integrated model of care between community and acute hospital service.

From this year, the training pathway for medical and surgical ophthalmology in Ireland will be distinct from day one of training and the selection process aims to target those interested in medical ophthalmology from the outset.

Metrics

The development of metrics in Community Ophthalmology by the HSE commenced in 2015 and is an important aspect of population care as it aims to inform the decision making process with regard to manpower and resources needed to care for patients in the community.

The accumulation and interpretation of statistics in the community has been challenging for clinicians as IT and administrative support is inconsistent. In spite of these difficulties, metrics are a vital part of the evidence which supports our work.

The project is an opportunity to demonstrate the work done in community Ophthalmology clinics and to accurately inform decisions on the service.

Medical Ophthalmology Sub-Specialty Training

We will have held four Medical Ophthalmology Sub-specialty days this year. They are very popular with a good attendance.

The first in the series of Medical Ophthalmology Sub-specialty Days took place at the ICO Annual Conference in Cavan in May 2017. The focus of the session was on OCT - Interpretation and Treatment of Macular Pathology. Dr. Susan Kelly and Mr. Ian Dooley facilitated an interactive workshop, which examined clinical cases on Macular Pathology.

A second subspecialty day on Practical OCT took place on September 15th. Mr. Frank Kinsella gave a very practical lecture on interpretation of Macular OCT'S followed by demonstrations and use of OCT machines by Mr. John Walsh and Mr. Fergal Byron.

The third subspecialty day was held on January 26th 2018 at the Education and Learning Centre, Royal Victoria Eye and Ear Hospital. Mr. Jeremy O'Connor presented an update on the Humphrey Visual Field Analysis and the Influence of Corneal Thickness on Glaucoma Management. Dr. Garry Treacy gave a talk on OCT as an Aid in Glaucoma Diagnosis and Management. A practical session followed the talks.

A fourth Sub-specialty session will take place on Thursday 17th May at the ICO Conference in Kilkenny, where Mr. Mark Cahill will present on Macular OCT.

The Committee wish to acknowledge and thank Ms. Yvonne Delaney, Dean of Postgraduate Education for her work in developing the medical ophthalmology training programme and to all who have contributed to the development and implementation of the new curriculum.

Manpower, Education & Research Committee

Gerry Fahy, Chairman

Committee Members; Conor Murphy, Fiona Kearns, Zubair Idrees, Ian Flitcroft, Donal Brosnahan, John Stokes, Deirdre Townley, Marie Hickey Dwyer, Yvonne Delaney, Shauna Quinn, Lisa McAnena, Michéal O'Rourke, Maedbh Rhatigan

HST

There are 18 Trainees on the HST training programme. A four year HST programme has now been implemented. A total of three years must be completed on programme as a minimum and only one year of recognition for a prior relevant post can be awarded.

The opportunity to sit final FRCSI exam in ophthalmology is confined to trainees in their final 4th year of training. FRCSI in ophthalmology is a requirement for CCST certification in ophthalmology from the Irish training system.

In response to anticipated increasing demand for services the number of year 1 HST posts has been increased to 7 from 4 and a medical ophthalmology training programme has commenced.

Fellowships

A four year HST programme will mean that fellowships are not required for CCST and can be completed post CCST. The Committee agree that it is most advantageous for newly trained doctors to go overseas on fellowship to gain new skills and perspectives. However, of note, the NDTP have launched the Aspire national fellowships. The College will have a role in the accreditation of these national fellowships and has formed a transparent panel to devise criteria and assess applications. A rotating external representative will be on the committee to give their professional opinion. The committee's mandate is to ensure the fellowship is the best it can be in order to support it.

The Fellowship Panel members are:

- Yvonne Delaney
- Gerry Fahy
- Maureen Hillery
- External Representative
- Trainee Rep – At present, Dr Michael O'Rourke

New Medical Training Pathway

The new medical training pathway was launched and promoted at Medical Careers' Day and on the ICO website.

Higher Surgical Training Dual Entry

Higher Surgical Training (HST) dual entry will commence in July 2018. The College will aim to increase HST numbers until dual entry ceases in 2020.

Recognition of Prior Training (Retrospection)

An application form and procedures have been developed for trainees looking for recognition of prior training. The application form requests detailed information on the post for recognition. A Retrospection Assessment Panel has been formed to review and decide on any retrospection applications. If there is an appeal of the assessment panel's decision to decline an application, it will be reverted to the training committee for consideration.

The Retrospection Assessment Panel members are:

- Yvonne Delaney
- Gerry Fahy
- Marie Hickey Dwyer
- Billy Power
- Donal Brosnahan

Seminar for HST trainees and Newly Appointed Consultants

The first in a series of seminars to support HST Trainees and newly appointed consultants as they transition from trainees to Consultants was held on Nov 25th 2017. Funding for the series has been secured so there are future sessions planned. There has been positive response from attendees to the first session.

Awards

Dr. Caroline Baily was awarded the Bayer/ICO Clinical Fellowship in Ophthalmology 2017/18. Dr. Stephen Farrell and Dr. Elizabeth McElena were awarded the Dr. Richard Steevens' overseas Scholarship 2018. Dr. Emma Duignan was the winner of the Ophthalmology Best Paper Prize, announced at the Royal Academy of Medicine (RAMI) Research Awards 2017.

Ethics Committee

Patricia Quinlan, Chairman

Committee members; Patricia McGettrick, Marc Guerin, Louis Collum, Paddy Condon, Lisa McAnena.

The Ethics committee met on two occasions over the past year.

Consent Forms

The College recently sent a letter to all members to remind them of the importance of using the Consent Forms which have been developed by the ICO Ethics Committee.

The ICO has also developed a suite of patient information leaflets on the most common surgical procedures for ophthalmic patients in Ireland and encourage members to avail of this resource for their patients. The responsibility for a correct consent process lies ultimately with the Consultant in charge.

Copies of the leaflets have been circulated by the College to hospital eye departments and any member who wishes to make an order for their clinic can contact the ICO office to arrange. The documents are also available to download in PDF format on the ICO website for use in member's practices or patients can be directed to the ICO site. The documents have also been produced in audio and Clear Print format in collaboration with the NCBI.

Assisted Decision Making Bill

The Mental Health Commission has estimated that it will be 2019 before this legislation is enacted. The Ethics Committee will stay informed on its progress.

Open Disclosure

The Civil Liability (Amendment) Bill, which includes protective provisions for open disclosure, was signed by the President Michael D. Higgins on the 22nd November last. This bill is now an act and is due to be commenced this year. The Committee will keep informed on this topic.

The Bill states that, where information and an apology are given, it will not constitute an admission of liability, fault or professional misconduct, and as such will not be admissible in evidence. Nor will it invalidate a contract of indemnity or insurance.

HSE Lead for Open Disclosure, Angela Tysall gave presentation at last year's ICO Annual Conference in Cavan. The HSE provides training courses for doctors on open disclosure.

ICO Code of Conduct

The Committee has been focussed on continuing to provide guidance on improving the consent process, thereby better protecting both the patient and the doctor and reducing risk of litigation. The work in this area has included the development of the ICO code of ethical conduct, guidelines on refractive surgery and on advertising regulation recommendations.

Committee members have reviewed the draft Code of Conduct for Council members and approve its introduction.

Children First Legislation

The guidelines on the implementation of this legislation have recently been updated. The definition of mandated persons in the Children's First Act 2015 includes clinicians where there is now a legal obligation for doctors to inform Tusla of a suspicion of neglect. "Children First: National Guidance for the Protection and Welfare of Children", published in 2017, outlines guidance for the recognition of the types of abuse (neglect, emotional, physical and sexual) and actions to take if you have any knowledge, belief or reasonable suspicion that a child has been harmed, is being harmed, or is at risk of being harmed.

There is an e-learning programme on the Children First website which covers the topics such as recognition of child abuse, responsibilities of mandated persons and the responsibilities of organisations working with children to safeguard children. The course takes approximately 1.5 hours and is a very informative tool. The completion of the course is now mandatory in many hospitals.

General Data Protection Legislation

New regulations with respect to data use are being implemented from May 25th 2017 as per the Data Protection Bill 2018. This act serves to protect all personal data and will apply to all data stored, including patient's medical records and details. The summer edition of the ICO newsletter will include an article with advice on how to safeguard data use and comply with the regulation.

Doctors Health & Wellbeing Draft HSE Strategy

The Committee agree that mechanisms to support Doctors Health & Wellbeing are important and to be supported. The Committee considered how a mentoring system for trainees could be implemented by the College in a meaningful way and suggests that consideration is given to a workshop for trainees on mentoring.

Wednesday 16th May

- 9.00am **Paper Session**
Co-Chairs: Ms Edel Cosgrave and Dr Mark James
- Combined iStent Insertion and Phacoemulsification:
The Mater Experience
G Guevara
- The Role of Hypoxia on LOXL1 Expression in
Pseudoexfoliation Glaucoma
A Greene
- Secondary Glaucoma and Visual Axis Opacification in Aphakic and
Pseudophakic Patients Following Congenital Cataract Surgery:
A 26-Year Longitudinal Case Series
M Murphy
- Short Term Experience with Xen Glaucoma Implant
K Kamel
- Questions**
- The Impact of Anterior Uveitis on Patients: a 5 Year Prognosis
from the DUET Study
C Goodchild
- Orbital lymphoma in an Irish Cohort from 2008 to 2018
M O'Rourke
- Surgical Outcomes Following Medial Rectus Readvancement for
Consecutive Exotropia
M Rhatigan
- Practice Trends in Management of Unilateral Congenital Cataract in
Britain and Ireland
L McAnena
- Questions**
- 10.00am **Welcome Address**
1918 – 2018 Centenary
Dr Alison Blake
President, Irish College of Ophthalmologists
- 10.15am **ICO/Novartis Eye Research Bursary Winner 2017 - 2018**
Introduction by Mr John Doris
Chairman, ICO Scientific & PCS Committee
- Attenuating Fibrosis in the Aged Lamina Cribrosa:
The Role of Epigenetics, Mechanotransduction and
Biomimetic Modelling**
Dr Rory Murphy
Registrar, Mater Misericordiae University Hospital, Dublin
- 10.30am **European Society of Ophthalmology (SOE) Lecture 2018**
Introduction by Miss Patricia Logan
*SOE Board Member and Consultant Ophthalmic Surgeon, Beaumont
Hospital and Mater Misericordiae University Hospital, Dublin*
- Strabismic Serendipity**
Mr Edward Loane,
*Consultant Ophthalmic Surgeon, Royal Victoria Eye and Ear and St
James's Hospital Dublin*
- 11.00am **Coffee**
- 11.30am **Uveitis Symposium**
Chair: Mr Dara Kilmartin
- Intraocular Lymphoma Masquerading as Uveitis**
Prof Conor Murphy
*Professor of Ophthalmology, Royal College of Surgeons in Ireland,
Consultant Ophthalmic Surgeon, Royal Victoria Eye and Ear Hospital,
Dublin*
- Local Therapies and Isolated Ocular Disease in Uveitis**
Mr Dara Kilmartin
*Consultant Ophthalmic Surgeon, Royal Victoria Eye and Ear Hospital,
Dublin*
- Biologics and Systemic Disease in Uveitis**
Dr Millicent Stone
*Consultant Rheumatologist in the Division of Ophthalmology, Guy's
and St Thomas's Hospital, and Moorfields Hospital, London*
- 1.00pm **Lunch**
- 2.00pm **Ergonomics & Injury Prevention in Ophthalmics**
Ms Michelle McNeill
*Senior Physiotherapist, Occupational Health Unit, Letterkenny, Co.
Donegal*
- 2.45pm **Winning Friends and Influencing People: Giving
Constructive Feedback that Doesn't Offend**
Dr Eva Doherty
*Clinical Psychologist and Director of the Human Factors and Patient
Safety, Royal College of Surgeons in Ireland.*
- 3.45pm **Coffee**
- 4.15pm **Paper Session**
Co-Chairs: Dr Patricia Quinlan and Dr Grace O'Malley
- Quality of Life in Uveal Melanoma Patients – an Irish Perspective
O Scannell
- Accurate Genetic Diagnosis Impacts the Management of Inherited
Retinal Degeneration Pedigrees in Ireland
K Stephenson
- Ozurdex: The University Hospital Waterford Experience
R Brady
- The Role of the Inflammasome in a Model of Dry Age-Related
Macular Degeneration
E Silke

Wednesday 16th May

Evaluation of Real-Life Clinical Outcomes of Treat-and-Extend Regimen for Wet Age-Related Macular Degeneration
D Minasyan

Vitreous Loss as a Complication of Trainee Performed Cataract Surgery: The Use of a Pre-Operative Scoring System for the Selection of Appropriate Cases to be Performed by Trainees
A M Mongan

Sulphur Hexafluoride Gas (SF6) as a Tamponading Agent in Retinal Detachment Surgery
T McSwiney

Vitreous Biopsies: Indications, Results and Patient Outcomes in UHG, 2010-2016
E Hughes

Questions

National Waiting Times for Treatment of Patients with AMD
S Whitlow

Bone Marrow-Derived Cell Recruitment to the Neurosensory Retina and Retinal Pigment Epithelial Cell Layer following Subthreshold Retinal Phototherapy.
D Kent

Improved Optic Nerve and Visual Function following Panmacular Subthreshold Diode Micropulse Laser (SDM) for Glaucomatous Optic Neuropathy
D Kent

Questions

Thursday 17th May

7.45-8.45am **Breakfast Symposium**
Supported by Allergan

9.00am **100 Years of Ophthalmic Societies in Ireland: Whither the Next 100 Years?**
Chair: Dr Alison Blake, President, Irish College of Ophthalmologists

2018 marks the 100th anniversary of the founding of the Irish Ophthalmological Society, the fore runner of the Irish College of Ophthalmologists. The centenary provides an opportune time for the College to briefly reflect on how practice and training both within the specialty and in the wider context of health care delivery has evolved to where we are now and most importantly to consider what the direction of travel will be over the coming years and how we want to determine the direction.

When the IOS was founded Ireland's political structures were in turmoil. One hundred years later our political institutions are settled but our health service is viewed by many to be in turmoil. Is that a fair analysis and if so how should we prepare ourselves for the future? What aspects of practice should we seek to influence and control to ensure that the progress of the last century is matched by progress over the next?

The speakers in the symposium will look to the present and future of ophthalmology and give their view on the areas of best focus in a system of ever increasing demand and complexity.

Patient Safety & Quality of Care - the Role of Clinical Leaders in Under - Resourced Environments
Dr Philip Crowley
National Director, HSE Quality Improvement Division

Physician Wellness - Caring for the Care Givers
Dr Cynthia Bradford
Professor of Ophthalmology, Dean McGee Eye Institute, Department of Ophthalmology of the University of Oklahoma Health Sciences Center, Oklahoma

Doctor/Management Relationship - Trends and Perspective from the NHS
Mr Michael Burdon
Consultant Ophthalmologist, Queen Elizabeth Hospital, Birmingham President, Royal College of Ophthalmologists

Educating our Doctors for Tomorrow – Regulation, Resilience and Reward
Miss Yvonne Delaney
Dean of Postgraduate Education, Irish College of Ophthalmologists, Dublin

Ophthalmic Practice in the Next Generation – What Will That Be
Dr Micheal O'Rourke
Senior Specialist Registrar, Royal Victoria Eye and Ear Hospital, Dublin

10.30am **Coffee**

Thursday 17th May

11.00am Paper Session

Co-Chairs: Dr Geraldine Comer and Mr Gerry Fahy

Eckardt Temporary Keratoprosthesis Insertion for Pars Plana Vitrectomy in a Blood-Stained Cornea
A Ni Mhealoid

Four Muscle Tenotomy Surgery for Improvement of Vision in Congenital Nystagmus – the Difference Between Driving and Not Driving
M Treacy

Corneal Neurotisation: An Irish First
B Power

Questions

How the Tear Film can Affect the Ocular Surface and the Perception of Vision
D Gallagher

Predisposing Risk Factors, Clinical and Microbiological Characteristics of Moraxella Keratitis
T McSwiney

Alcohol Delamination of the Corneal Epithelium for Recurrent Corneal Erosion Syndrome
A Ni Mhealoid

A Retrospective Analysis of Patients with Ocular Graft Versus Host Disease Requiring Autologous Serum Drops
C Lyons

Influence of Phakic Intraocular Lens Implantation on Endothelial Cell Count and Optical Coherence Tomography Measurements After a Minimum of 4 years Follow-Up
B Woods

Repair of Globe Rupture and Penetrating Globe Injuries in University Hospital Galway: A 24 Month Retrospective Review
E Hughes

Questions

12.15am Short Presentation from a Selection of the Highest Scoring Posters ICO Conference 2018

12.30pm Mooney Lecture 2018

The Challenge of Cataract Surgery

Dr Cynthia Bradford

Professor of Ophthalmology, Dean McGee Eye Institute, Department of Ophthalmology of the University of Oklahoma Health Sciences Center, Oklahoma

1.00pm Lunch

2.00pm Medical Ophthalmology Workshop

OCT - Interpretation and Treatment of Macular Pathology

Chair: Dr Fiona Kearns, Chairman, Medical Ophthalmologists Committee, ICO

Mr Mark Cahill

Consultant Ophthalmic Surgeon, Royal Victoria Eye and Ear Hospital, Dublin

Dr Susan Kelly

Consultant Medical Ophthalmologist, St Vincent's Private Hospital, Dublin

Announcement of Winner of Scope Travel Bursary 2018

Update from 2017 Recipient of Scope Travel Bursary

Dr Margaret Morgan

2.00pm Trainee Workshop

Eye Movement Disorders and Nystagmus

Prof Patrick Lavin

Professor of Neurology and Neurosciences, and Ophthalmology and Visual Sciences; Director for The Vanderbilt Headache Clinic, Nashville, Tennessee

Writing and Publishing Papers

Mr Ian Dooley

Consultant Ophthalmic Surgeon, Mater Misericordiae University Hospital, Dublin

Friday 18th May

8.30am **Irish College of Ophthalmologists Annual General Meeting**
Chair: Dr Alison Blake, President ICO

9.15am **Interactive Neuro-ophthalmology Workshop**
Prof Patrick Lavin
Professor of Neurology and Neurosciences, and Ophthalmology and Visual Sciences; Director for The Vanderbilt Headache Clinic, Nashville, Tennessee

10.00am **Neuro-ophthalmology Symposium**
Unexplained Visual Symptoms; to Believe or Not to Believe, that is the Question!

Chair: Miss Patricia Logan

Psychogenic Disorders in Neuro-Ophthalmology: Beware the Pitfalls

Prof Patrick Lavin
Professor of Neurology and Neurosciences, and Ophthalmology and Visual Sciences; Director for The Vanderbilt Headache Clinic, Nashville, Tennessee

Shut Your Eyes and See

Mr. Michael Burdon
*Consultant Ophthalmologist, Queen Elizabeth Hospital, Birmingham
President, Royal College of Ophthalmologists*

Unusual visual symptoms, Hallucinations, Illusions, Entopic Phenomena, Visual Snow, Ghosts, etc.

When are they of Concern?"

Prof Patrick Lavin
Professor of Neurology and Neurosciences, and Ophthalmology and Visual Sciences; Director for The Vanderbilt Headache Clinic, Nashville, Tennessee

11.30am **Coffee**

12.00pm **Neuro Ophthalmology Short Paper Presentations**
Co-Chairs: Dr Maureen Hillery and Mr John Doris

Visual Snow – A Case Series
E Doolin

Review of the clinical presentation and relation between CSF opening pressure and loss of visual function in patients with Idiopathic Intracranial Hypertension (IIH) at University Hospital Waterford
A Salih

A Retrospective Analysis of Orbital Radiotherapy in Thyroid Eye Disease
C Lyons

Genotype-Phenotype correlations of patients given a diagnosis of congenital stationary night blindness. (How stationary is congenital stationary night blindness?)
N Wynne

Questions

12.30pm **Clinical Audit – What are the Medical Council Requirements and How Can I Make it Meaningful & Relevant to my Practice?**

Presentation by Dr Maureen Hillery and Mr John Doris

Hydroxychloroquine and Chloroquine Retinopathy: Audit on Referrals to a Tertiary Ophthalmic Centre and Recommendations for Future Referrals
P Murtagh

An Audit of Visual Field Monitoring of Idiopathic Intracranial Hypertension in Sligo University Hospital and Letterkenny General Hospital
C Bourke

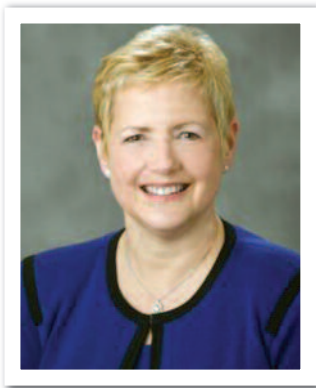
Five-Year Audit of IOL Exchanges at the Royal Victoria Eye and Ear Hospital
B Cummings

Evaluation of Outpatient Referrals to the Ophthalmology Department, University Hospital Limerick; A Look to the Future
R Ellard

1.15pm **Announcement of ICO Medal Winners 2018**

Barbara Knox Medal for Best Paper
Sir William Wilde Medal for Best Poster

1.30pm **Conference concludes**



Dr. Cynthia Bradford

**Professor of Ophthalmology, Dean McGee Eye Institute,
Department of Ophthalmology of the University of Oklahoma Health Sciences Center,
Oklahoma**

Dr. Cynthia Bradford is Professor of Ophthalmology at the Dean A. McGee Eye Institute/ Department of Ophthalmology at the University of Oklahoma Health Sciences Center in Oklahoma City.

Dr. Bradford served as the American Academy of Ophthalmology President in 2017. Her clinical focus is in cataract and intraocular implant lens surgery, with special interests in complicated cataract surgeries, such as after trauma or prior ocular surgery; she has extensive experience performing cataract surgery on patients with prior retinal and glaucoma surgeries, or after refractive surgeries such as RK, PRK or LASIK.

Dr. Bradford has been active in teaching throughout her career. She has authored modules and books to teach ophthalmology to medical students and primary care physicians. She is past executive editor for the American Academy of Ophthalmology's Basic Ophthalmology, which is an introduction to ophthalmology for medical students in America and has been translated into many languages for use throughout the world.

She is the coordinator for medical student and primary care resident education in ophthalmology at Oklahoma University. For over 20 years, she has taught the University of Oklahoma ophthalmology residents to perform cataract surgery. She participates in clinical research involving cataract surgery.



Mr. Micheal Burdon

**Consultant Ophthalmologist, Queen Elizabeth Hospital, Birmingham President,
Royal College of Ophthalmologists**

Mr. Michael Burdon is a consultant ophthalmologist with an interest in neuro-ophthalmology at the Queen Elizabeth Hospital, Birmingham. He underwent subspecialty training in Brisbane, St Thomas' Hospital, Moorfields Eye Hospital, and the National Hospital for Neurology and Neurosurgery.

Mr. Burdon was chair of the Royal College of Ophthalmologists (RCOphth) Scientific Committee and remains chair of the British Isles Neuro-Ophthalmology Club. He has an established reputation as a teacher of neuro-ophthalmology, speaking at numerous national and international meetings, and co-authoring "The Neuro-Ophthalmology Survival Guide" with Anthony Pane and Neil Miller and has extensive experience in the diagnosis and management (including surgical correction) of adult motility disorders. His main research interests are papilloedema and idiopathic intracranial hypertension.

Mr. Burdon took over as President of The Royal College of Ophthalmologists on 24 May 2017. He is committed to RCOphth maintaining the high standards of education, training and assessment to ensure that the development and delivery of world-class eye care for all patients is at the heart of the ophthalmology profession.



Professor Patrick Lavin

**Professor of Neurology and Neurosciences, and Ophthalmology and Visual Sciences;
Director for The Vanderbilt Headache Clinic, Nashville, Tennessee**

Dr. Patrick Lavin joined the faculty at Vanderbilt University Medical Center, Nashville, Tennessee in 1983 as assistant professor in the Department of Neurology and Ophthalmology where he helped start up the neuro-ophthalmology division. He was promoted to associate professor in 1989, and professor in 2001 - a position he still holds. Lavin has also served as director of the Ocular Motility Laboratory and director of the Transcranial Doppler Laboratory.

Dr. Lavin completed Fellowship training in Neuro-ophthalmology at the Case Western Reserve University, Cleveland and in Parkinson's Disease Research, at Charing Cross Hospital, London.

His clinical interests include acute and chronic optic neuropathies, eye movement disorders, nystagmus, neuro-otology, and headache. Dr. Lavin's clinical research efforts center on eye movement disorders, nystagmus, metabolic disorders affecting the visual system, and MR imaging in patients with optic neuropathies.

Dr. Lavin was one of the first to publish the association of cerebral white matter lesions in patients presenting with demyelinating optic neuritis, and the first to describe the MRI changes in nonketotic hyperglycemic hemianopia.

Currently his research interest is in utilizing advanced imaging techniques to study the pathological aspects of anterior visual pathway disorders and to utilize the findings to improve patient care. He collaborates with Dr. Seth Smith who is studying the radiological evolution of optic neuritis using chemical exchange saturation transfer in spectroscopic imaging and a qMT method that he designed to characterize the evolution of myelin damage after an attack of optic neuritis.



Dr. Millicent Stone

**Consultant Rheumatologist in the Division of Ophthalmology,
Guy's and St Thomas's Hospital, and Moorfields Hospital, London**

Dr. Millicent Stone is a Consultant Rheumatologist in the Division of Ophthalmology Guys and St Thomas Hospital, London.

She trained in Ireland and Canada and worked as a Consultant in Toronto, Canada for several years before returning to work in the UK as a Consultant.

Dr. Stone is involved in research having trained as an Epidemiologist in Canada to understand how diseases affect people with arthritis. She set up a combined Rheumatology Uveitis Clinic with the Department of Ophthalmology at St Michael's Hospital in Toronto and conducted research on the prevalence of inflammatory back pain in a uveitis cohort.

In 2005 Dr. Stone was recruited to the role of Director of the Spondyloarthropathy Programme at the Royal National Hospital for Rheumatic Diseases and was appointed a Clinical Reader, Department of Pharmacy and Pharmacology at the University of Bath.

In 2014 Dr. Stone was recruited to her current role as Consultant Rheumatologist, Department of Ophthalmology Guys and St Thomas Hospital to create a program to support patients with inflammatory eye diseases who require immunosuppressant drugs, the first of its kind in UK. This is a unique role which brings together her expertise in biologic agents, clinical outcomes, rheumatology and her interest in medical ophthalmology.

Dr. Stone is a peer reviewer for a number of journals and was been awarded a grant by the Friends of Moorfields Eye Hospital for £100,000 to develop a multi-disciplinary care programme for inflammatory ocular disease between Moorfields Eye Hospital and St Thomas'.

She is also a member of the London Inflammatory Ocular Network and the Medical Director of the North Wing Treatment Biologics Unit at St Thomas' Hospital, the first dedicated biologics unit for eye patients in UK which she set up and runs.

Dr. Stone's subspecialty interest is in scleritis. She is currently assembling a cohort of scleritis patients and looking at serological predictors of onset and disease severity, specifically isotypes of anti-CCP antibodies.



Dr. Philip Crowley

National Director, HSE Quality Improvement Division

Dr. Philip Crowley, National Director of Quality Improvement is a doctor who trained as a General Practitioner and worked for five years in Nicaragua. He worked in the NHS to tackle health inequalities. He also trained in public health medicine and has worked with the Institute of Public Health in Ireland (IPH), and the Irish College of General Practitioners (ICGP) on refugee and asylum seeker health. Philip worked for 6 years as Deputy Chief Medical Officer with the Department of Health, and he continues to work as a GP part-time.



Dr. Eva Doherty

Clinical Psychologist and Director of the Human Factors and Patient Safety, Royal College of Surgeons in Ireland.

Dr. Eva Doherty is a practising clinical psychologist who is also Director of the Human Factors in Patient Safety (HFPS) training, research and assessment programme at the Royal College of Surgeons in Ireland (RCSI). The HFPS training is a mandatory component of the postgraduate professional training for surgical, emergency medicine and ophthalmology trainees.

Dr. Doherty also leads the academic MSc in Human Factors in Patient Safety which is an inter-professional programme. The HFPS training provides interactive workshops for trainees and more recently for consultants on topics which include medical error, risk management, communication, teamwork, conflict resolution, decision-making, disclosure, emotional intelligence, crisis management, stress management, professionalism and leadership.

Dr. Doherty's recent publications and research interests include the topics of communication skills, personality factors and medical training, emotional intelligence and professional medical competencies as well as the assessment of improvements and the provision of remediation in communication competencies following training.



Ms. Michelle McNeill

Senior Physiotherapist, Occupational Health Unit, Letterkenny, Co. Donegal

Michelle McNeill is a Senior Physiotherapist working in Occupational Health Unit, Letterkenny, Co. Donegal. Her job roles include provision of Physiotherapy assessment and treatment for staff attending Occupational Health.

Ms. McNeill co-ordinates and instructs Manual Handling courses for HSE staff in Donegal.

She has a MSc in Health Ergonomics and carries out workplace visits to advise on ergonomics and injury prevention.



Professor Conor Murphy

**Professor of Ophthalmology, Royal College of Surgeons in Ireland,
Consultant Ophthalmic Surgeon, Royal Victoria Eye and Ear Hospital, Dublin**

Professor Conor Murphy is the Chair and Professor of Ophthalmology at the Royal College of Surgeons in Ireland (RCSI) and a consultant ophthalmic surgeon at the Royal Victoria Eye and Ear Hospital in Dublin. He specialises in uveitis and disorders of the cornea and ocular surface, providing a national referral service in these areas. He has a particular surgical interest in corneal transplantation and cataract surgery.

Prof. Murphy heads the Ocular Immunology Research Group at RCSI, which focuses on research into the immunology of Sjogren's syndrome-related dry eye disease, corneal transplantation and uveitis.

As post-graduate Professor of Ophthalmology, Professor Murphy is also the Chief Examiner of the postgraduate MRCSI and FRCSI examinations in ophthalmology in Ireland.



Mr. Dara Kilmartin

**Consultant Ophthalmic Surgeon,
Royal Victoria Eye and Ear Hospital, Dublin**

Mr. Dara Kilmartin is a Consultant Ophthalmic Surgeon, Royal Victoria Eye and Ear Hospital, Beacon Hospital and Blackrock Clinic, Dublin. His sub specialty is medical and surgical retina.



Dr. Rory Murphy

Registrar, Mater Misericordiae University Hospital, Dublin

Dr. Rory Murphy graduated from University College Dublin, completing his intern year in St Vincent's University Hospital. He then commenced Ophthalmic Basic Specialist Training, working between Cork University Hospital and the Mater Misericordiae University Hospital, Dublin.

In conjunction with his clinical work, Dr. Murphy is working in the Catherine McCauley Research Centre under the guidance of Professor Colm O'Brien, focusing on novel therapeutic possibilities in the treatment of Glaucoma.



Mr. Edward Loane

Consultant Ophthalmic Surgeon, Royal Victoria Eye and Ear Hospital and St James's Hospital Dublin

Mr. Edward Loane is a Consultant Ophthalmic Surgeon in the Royal Victoria Eye and Ear Hospital and St. James's Hospital, Dublin.

Mr. Loane's sub-specialty interest is strabismus and ocular motility disorders, having completed fellowship training in Liverpool and Leicester.



Mr. Mark Cahill

Consultant Ophthalmic Surgeon, Royal Victoria Eye and Ear Hospital, Dublin

Mr. Mark Cahill is a consultant eye surgeon with a special interest in retinal diseases in The Royal Victoria Eye and Ear Hospital and Beacon Hospital. He is also the clinical lead for Global Vision, which provides photography and grading services for Diabetic Retina Screen, the national diabetic retinopathy screening programme run by the National Screening Service (NSS).

Mr. Cahill completed a fellowship in diabetic retinopathy at the Beetham Eye Institute in the Joslin Diabetes Center, a Harvard University hospital in Boston, where he participated in research on novel treatments to prevent vision loss in patients with diabetic eye disease.

Mr. Cahill gained further experience in assessing and treating a wide range of eye conditions including age-related macular degeneration, retinal vein occlusions and macular holes following a two year vitreo-retinal fellowship at the Duke University Eye Centre. He worked as a consultant eye surgeon in Duke University Eye Center, before returning to Ireland in 2004.

Mr. Cahill specialises in the treatment of patients with retinal diseases, cataract, glaucoma and general ophthalmology.



Dr. Susan Kelly

Consultant Medical Ophthalmologist, St Vincent's Hospital and The Royal Victoria Eye and Ear Hospital, Dublin

Dr. Susan Kelly is a graduate of RCSI and commenced training as an Ophthalmologist in the Royal Victoria Eye & Ear Hospital in 2002. She completed her Fellowship training in Bristol Eye Hospital and now practices with a special interest in medical retina at St Vincent's Public and Private Hospital, Blackrock Clinic and the Royal Victoria Eye and Ear Hospital.



Dr. Fiona Kearns

Medical Ophthalmologist, Beaumont Hospital, Dublin

Dr. Fiona Kearns is a Medical Ophthalmologist in Beaumont Hospital.

Dr. Kearns practice is in General Ophthalmology with an interest in Neuro Ophthalmology and drug toxicity and has recently established the first hydroxychloroquine screening service.



Dr. Michéal O'Rourke

Senior Specialist Registrar, Royal Victoria Eye and Ear Hospital, Dublin

Dr. Michéal O'Rourke graduated from Trinity College in 2007 and started training in ophthalmology in 2010. He was the BST trainee representative from 2011-2012 and is the current HST representative. This involves organising sponsored training meetings for SpRs, representation and contribution at training committee meetings. He is also the ophthalmology representative on the Irish surgical training group.

He is currently in year 3 of the ophthalmology higher surgical training scheme. In the interim between BST and HST in ophthalmology, he completed a Ph.D in uveitis examining clinical and experimental aspects of anterior uveitis. He is currently completing a Certificate in Health Care Management with Smurfit Business School at UCD.

Prize Winners and Honorary Lectures

The ICO awards a number of annual prizes including the Sir William Wilde Medal for Best Poster presentation and the Barbara Knox Medal for best paper presentation. In 2017-2018 two bursaries were awarded, an eye research bursary supported by Novartis and a clinical fellowship supported by Bayer.

A travel and education bursary, supported by Scope Ophthalmics will be awarded for the best case submitted for the Medical Ophthalmology Sub Specialty Workshop.

Each year the College invites two distinguished ophthalmologists to give honorary lectures; the Montgomery Lecture and the Mooney Lecture.

ICO/Novartis Eye Research Bursary 2017

Dr. Rory Murphy was announced the winner of the ICO/Novartis Eye Research Bursary 2017 at the Annual Adare Retinal Meeting in Limerick on September 28th, 2017 for his study entitled "Attenuating Fibrosis in the Aged Lamina Cribrosa: The Role of Epigenetics, Mechanotransduction and Biomimetic Modelling."

The annual bursary is an unrestricted educational grant awarded to a doctor who wishes to undertake a research project or specific training in the field of ophthalmology. The bursary has been instrumental in facilitating eye doctors in Ireland to undertake pioneering research into potential cures and treatments for sight-threatening conditions.

Dr. Murphy's study focuses on preventing sight loss in glaucoma through inhibitors that could offer a novel and completely different therapeutic option in glaucoma management from the current method.

The research is being carried out between the facilities at University College Dublin and The Catherine McAuley Research Centre, Mater Misericordiae University Hospital, under the supervision of Prof. Colm O'Brien, Professor of Ophthalmology.

Attenuating Fibrosis in the Aged Lamina Cribrosa: The Role of Epigenetics, Mechanotransduction and Biomimetic Modelling.

Dr. Rory Murphy, Prof. Colm O'Brien

Catherine McAuley Research Laboratory, Mater Hospital, Department of Ophthalmology,

Glaucoma is the leading cause of irreversible blindness worldwide. It is age-related and with an ageing population, we will see a significant increase in its prevalence and burden of disease. Currently, the only available method of slowing disease progression is by lowering intraocular pressure, and in many individuals this is not enough to prevent eventual blindness.

Glaucoma exhibits maladaptive, fibrotic remodelling of the Lamina Cribrosa (LC), underpinned by stiffening of its extracellular matrix (ECM). This mesh-like, porous structure in the scleral portion of the optic nerve head demonstrates biomechanical alterations in the pre-perimetric stages of glaucoma and typically progresses to subsequent sight loss. At present there is no available therapeutic option for attenuating this pro-fibrotic state.

Lamina Cribrosa cells are activated by a matrix-driven positive feedback loop, with increased matrix stiffness driving further fibrosis. Amplifying and sustaining fibrosis is co-ordinated by mechanotransduction and subsequent epigenetic changes, upregulating profibrotic genes and leading to ECM remodeling.

The Yorkie-homologue, YAP (Yes-Associated Protein), a key transcriptional co-factor of the Hippo Pathway, has been identified as an important nuclear relay signal of ECM stiffness. In cancer-associated fibroblasts, Verteporfin has recently been shown to disrupt the YAP-TEAD (a transcription protein) association, preventing upregulation of several well established pro-fibrotic genes implicated in lamina cribrosa remodelling, namely connective tissue growth factor (CTGF), transglutaminase-2, plasminogen-activator inhibitor-1, and transforming growth factor- β (TGF- β). Verteporfin, a benzoporphyrin derivative and photosensitizer, has previously been used by ophthalmologists in photodynamic therapy to treat choroidal neovascularisation, but its use without light activation for the inhibition of fibrosis remains to be explored.

Using Collagen-1 coated polyacrylamide hydrogel substrates (Softwell Collagen, Matrigen Products) with tunable stiffness, we can replicate the 2D environment of cells normally residing in the Lamina Cribrosa in states of health and disease. Furthermore, our preliminary work has involved developing a novel 3D collagenous, biomimetic Lamina Cribrosa scaffold for in-vitro use, to more closely resemble the microenvironment in-vivo.

Utilizing altered 2D and 3D matrix stiffness as a stimulus for pro-fibrotic cellular activation, and Verteporfin as a means of disrupting the YAP-TEAD complex, we will determine the ability to inhibit mechanotransduction of matrix stiffness as evidenced by prevention of the upregulation of profibrotic genes in LC cells.

The broad implications from this work include a greater understanding of the mechanisms generating a pro-fibrotic state in glaucoma. It may identify novel therapeutic avenues to attenuate fibrosis of the lamina cribrosa, delaying maladaptive optic nerve remodeling, with the ultimate goal of reducing sight loss in glaucoma.

ICO Medal Winners 2017

The winner of the Barbara Knox Medal for Best Paper 2017 was Dr. David Brinkman for his presentation on the "Comparing the Effectiveness and Tolerability of Preservative-Free Tafluprost Versus Preserved Latanoprost in the Management of Glaucoma and Ocular Hypertension"

The study was carried out at Cork University Hospital with the aim of determining whether there are any differences in intraocular pressure (IOP) control or severity of dry eye symptoms and signs between patients treated with either preservative-free tafluprost drops or latanoprost preserved with 0.02% benzalkonium chloride (BAC).

The winner of the Sir William Wilde Medal 2017 for Best Poster was Dr. Christine Goodchild for her presentation on the "An Audit of the Quality of Inpatient Referrals Received by the Ophthalmology Consultation Service in a Tertiary Hospital".

The aim of the study was to evaluate the quality of information included in inpatient referral requests, when accessing the Ophthalmology consultation Service in Beaumont Hospital. The audit showed the varied quality of information received in referrals which may be due to a lack of a structured form. The next goal is to provide a standardised form available to all teams. The format will include all required fields thus helping streamline the service and ensuring the effective allocation of resources.

Annual Mooney Lecture 2017

The Annual Mooney Lecture 2017 was given by Professor Jonathan Crowston, Ringland Anderson Professor of Ophthalmology University of Melbourne and Managing Director at the Centre for Eye Research in Australia (CERA). Prof. Crowston presented his lecture on "Climbing the Glaucoma Mountain – Future Challenges and Opportunities" at the ICO Annual Conference 2017 at the Slieve Russell Hotel in Cavan.

Prof. Crowston's research is focused on understanding why ageing predisposes to optic nerve disease and in particular focusing on neuroplasticity and the potential for retinal ganglion cell recovery. His lecture discussed new evidence from a novel study relating to the impact of lifestyle on glaucoma risk. The findings of the recent mouse model study at CERA shows that exercise could be a key factor in the protection of cells that are affected by glaucoma which can lead to irreversible sight loss.

Annual Montgomery Lecture 2017

The 2017 Montgomery Lecture was delivered by Prof. Michael O'Keeffe, Consultant Ophthalmic Surgeon and Newman Clinical Professor of Paediatric Ophthalmology, on November 24, 2017 at the Trinity Biomedical Sciences Institute, Dublin.

The lecture entitled "The Evolution of Paediatric Cataract Surgery discussed classification, surgical technique, complications and recent advances to improve visual outcomes in paediatric cataract surgery.

Bayer/ ICO Clinical Fellowship in Ophthalmology 2017/18

Dr. Caroline Baily was awarded the Bayer/ICO Clinical Fellowship in Ophthalmology 2017/2018. The announcement was made at the ICO Annual Conference in 2017. She commenced her fellowship in Medical Retina at Manchester Royal Eye Hospital in July 2017.

A full list of the past Honorary lectures and ICO medal winners is available on the ICO website www.eyedoctors.ie

Paper Session

Wednesday 16th May 9.00am

Combined iStent Insertion and Phacoemulsification: The Mater Experience

Guevara G, Dervan E.

Mater Misericordiae University Hospital, Dublin.

Objectives:

To evaluate the efficacy and safety of combined phacoemulsification and single iStent insertion in both primary open angle glaucoma and pseudoexfoliation glaucoma. The iStent device is a heparin-coated, nonferromagnetic titanium device with a snorkel shape that is implanted into Schlemm's canal.

Methods:

This was a retrospective case series from a single institution. All subjects underwent single iStent implantation combined with cataract surgery by a single surgeon and were followed up at regular intervals post operatively. Primary outcome measures were the reduction in intraocular pressure (IOP) and number of glaucoma medications used postoperatively.

Results:

A total of 10 eyes in 8 patients underwent combined phacoemulsification and iStent insertion at our institution between January and July 2017. The mean patient age was 80 ± 8.61 . 5 eyes in 4 patients had pseudoexfoliation glaucoma and 5 eyes in 4 patients had primary open angle glaucoma. One patient had previously undergone ALT, the remaining patients had never received any prior surgical intervention for their glaucoma. Preoperatively the mean intraocular pressure was 24.1 ± 5.4 mmHg while the mean number of glaucoma medications was 3.8 ± 0.4 . Patients were reviewed day one post operatively and at regular intervals subsequently. At their most recent review the mean reduction in IOP in our patients was 10.9 ± 7.2 mmHg. The mean reduction in the number of glaucoma medications was 1.4 ± 1.07 . 2 patients were noted to have corneal oedema on day one post operatively however this resolved satisfactorily in both cases and no other complications were experienced.

Conclusions:

In the short term combined phaco-iStent is safe and effective in lowering IOP and reducing number of IOP lowering medications in our patient cohort of both POAG and PXFG. iStent is likely to be a useful addition to our options for lowering IOP as an alternative to traditional phaco-trabeculectomy with an excellent safety profile.

The Role of Hypoxia on LOXL1 Expression in Pseudoexfoliation Glaucoma

Greene A^{1,2}, McDonnell F³, Brennan D⁴, Dervan E², O'Brien C^{1,2}, Wallace D^{1,2}.

¹UCD Clinical Research Centre, Mater Misericordiae University Hospital, Dublin,

²Mater Misericordiae University Hospital, Dublin,

³Department of Ophthalmology, Duke University Medical Centre, Durham, NC, USA. ⁴Department of Anatomy, School of Medicine, UCD. Dublin.

Objectives:

Lysyl oxidase like 1 is an enzyme encoded by the LOXL1 gene. It catalyzes the first step in collagen and elastin crosslinking, and its dysregulation is associated with an increased susceptibility for developing exfoliation syndrome and pseudoexfoliation glaucoma. LOXL1 'silencing' through DNA methylation is observed in diseases such as Cutis Laxa and bladder cancer. We believe that this mechanism is implicated in the development of pseudoexfoliation glaucoma, and that the hypoxic glaucomatous environment could have a role in initiating this process. The purpose of this study was to investigate LOXL1 levels and global methylation in pseudoexfoliation (PXFG) cells and cataract (CAT) controls, under hypoxic and normoxic conditions.

Methods:

Cells were propagated from explanted subconjunctival Tenons capsules isolated during surgery in PXFG patients and cataract (CAT) controls. LOXL1 expression was measured at a genomic and protein level. Following this, LOXL1 expression was measured under hypoxic (1%O₂) conditions. This was performed using qPCR and Western Blots. We then examined global DNA methylation in CAT and PXFG cells by ELISA assay, comparing global methylation in PXFG cells and CAT controls treated ± H₂O₂ to observe if differential levels of methylation are seen.

Results:

Expression of LOXL1 was decreased in PXFG cells compared to cataract (CAT) controls ($p < 0.01$). Results were confirmed at the mRNA and protein level. Global DNA methylation was increased in PXFG vs. CAT ($p < 0.05$). Decreased expression of LOXL1 was observed in CAT controls cultured under hypoxic (1% O₂) conditions compared with normoxic (21% O₂) conditions ($P < 0.05$) and differential expression was seen at a protein level. Differential levels of global methylation were seen in hypoxia compared with normoxic conditions.

Conclusions:

Methylation of single nucleotide polymorphisms in the LOXL1 gene is associated with the development of pseudoexfoliation glaucoma. Hypoxia alters the gene expression of LOXL1. Blocking methylation via DNA methyltransferase inhibitors may offer an additional therapeutic target, which clinicians may avail of in the management of pseudoexfoliation glaucoma.

Secondary Glaucoma and Visual Axis Opacification in Aphakic and Pseudophakic Patients Following Congenital Cataract Surgery: A 26-Year Longitudinal Case Series

Murphy M, McAnena, O'Keefe, M.

Temple Street University Hospital, Dublin.

Objectives:

To determine the incidence, timing and risk factors for glaucoma and visual axis opacification (VAO) development following surgery for congenital cataract in the first year of life.

Methods:

A longitudinal case series of all cataract surgery performed in Temple Street Children's University Hospital (TSCUH) over a 26-year period was conducted. A total of 93 subjects (135 eyes) were analysed. 62 eyes had a primary intraocular lens (IOL) inserted at the time of surgery; 73 eyes were aphakic. We recorded patient demographics, age at surgery, length of follow-up, rates and time to diagnosis of glaucoma and rates of VAO. Relative risk analysis was performed to identify potential risk factors for secondary glaucoma and VAO.

Results:

Mean length of follow-up was 160.02 + 64.42 months (13.3 years), range 40-336 months. Final mean LogMAR across all groups was 0.85 + 0.51 [0.90]. Overall 45 (33.33%) eyes developed secondary glaucoma, 12 (19.4%) in pseudophakic eyes and 33 (45.21%) in aphakic eyes. The incidence of glaucoma was highest in bilateral aphakia (relative risk 1.96, $p = 0.0240$) and in eyes with corneal diameter <9.5mm (relative risk 1.93, $p = 0.0364$). There was no significant difference in glaucoma rates between pseudophakia and aphakia in those operated on less than 2.5 months of age. Secondary glaucoma occurred between 3 months to 16.5 years post-surgery. Rates of VAO were lower in aphakia compared to pseudophakia (relative risk 0.59, $p = 0.0098$).

Conclusions:

Overall glaucoma rates of one-third are similar to those recorded in the infantile aphakic treatment study. It can occur up to 17 years post cataract surgery, evidence that long-term follow-up is imperative.

Short Term Experience with Xen Glaucoma Implant

Kamel K, Dervan E.

Mater Misericordiae University Hospital, Dublin.

Objectives:

This audit looks at the success rate of Xen glaucoma implants, risk profile and elimination of topical anti-glaucoma drops within 3 to 9 months follow up period.

Methods:

Retrospective study of 10 eyes of 8 patients who underwent Xen glaucoma stent implantation with/without phacoemulsification and intraocular lens implantation. The mean follow-up time was 4 months. The aim of the intervention was to achieve adequate intraocular pressure (IOP) control without medication. We looked at IOP reduction, intraoperative and postoperative complications and elimination of glaucoma drops. Success rate was determined depending on: 1) Primary: if IOP well controlled with no medications or further surgery, and 2) Overall: if IOP well controlled with medications or one further surgery.

Results:

Mean IOP was lowered from 21.9mmHg to 15.3mmHg. The medication score was lowered from 2.75 to 0.1. One patient (10%) required bleb needling (successful) and one patient (10%) is awaiting bleb needling. 3 eyes required more than one intraoperative attempts. 2 eyes developed mild intraoperative hyphaema and one eye sustained a mild descemet's tear. The primary success rate was 60% and the overall success rate was 70%. The primary success rate was higher in pseudophakic eyes (100%) than in phakic eyes (50%) or combined surgery (50%).

Conclusions:

Our short term data shows that Xen implants has an IOP-lowering potential with significant elimination of anti-glaucoma drops.

The Impact of Anterior Uveitis on Patients: a 5 Year Prognosis from the DUET Study

Goodchild C, O'Rourke M, Haroon M, Fitzgerald O, Murphy,C.

Royal Victoria Eye & Ear Hospital, Dublin, St Vincent's University Hospital and Royal College of Surgeons in Ireland, Dublin.

Objectives:

To analyse the impact of anterior uveitis on patients, 5 years after first presentation.

Methods:

All patients (n=96) who were diagnosed with their first anterior uveitis episode from the DUET study were invited to attend an OPD review session. In the review session patients were asked a standardised medical history, a quality of life survey with the SF36 and VCM1 questionnaire and a detailed ocular examination was performed by a single ophthalmologist. All information was collated and analysed in excel.

Results:

To date 47% of invited patients have attended the review clinic. The average time, in years, between initial presentation to review is 6 years. In this study group 28% of patients were HLA B27+ and 28% had spondyloarthropathy (SPA). Subsequent to initial presentation 21% of patients were diagnosed with uveitis in the other eye, the majority of these patients have SPA. 43% of patients had a recurrence of uveitis with an average of 2 episodes (29% in SPA group, 14% in idiopathic group). 21% of patients had a recurrence in the last year. Cataracts developed in 21% of patients since initial uveitis diagnosis. No patients have been diagnosed with glaucoma but 20% were referred to a glaucoma clinic since their review appointment. In the SPA group of patients, 75% are on immunosuppressive treatment. There were no new diagnosis of SPA made. Patients with SPA have a higher VCM1 score as compared to those without, but still score within the "not at all" concerned about vision range (0.9 SPA, 0.53 idiopathic).

Conclusions:

The long-term prognosis of anterior uveitis is encouraging, as only a minority of patients experience recurrence, especially in the idiopathic group. This study also highlights the importance of diagnosing SPA early in the disease as prompt treatment can help preserve long term vision quality of life. It is also reassuring to note that with the use of the DUET algorithm no new cases of SPA have come to light.

Orbital Lymphoma in an Irish Cohort from 2008 to 2018

O'Rourke M, Kennedy S, Moriarty P, Gullo G, Khan R.

Royal Victoria Eye and Ear Hospital, Dublin.

Purpose:

This study describes the clinical and pathological features of orbital lymphoma at a tertiary referral orbital service.

Methods:

This cohort study examines all cases of orbital lymphoma at the Royal Victoria Eye and Ear Hospital, Dublin over a 10 year period. Tissues samples underwent microscopic examination, immunohistochemistry, flow cytometry, molecular genetic studies and fluorescent in situ hybridisation as appropriate.

Results:

In total, 25 patients were diagnosed with orbital lymphoma with mean age 67 years (SD 18.9) and female predominance at 68%. Proptosis was the commonest presenting feature being obvious in half the cohort followed by ptosis, pain and strabismus. Optic nerve compression was present in 16%. Staging was as follows: stage 1; 66%, stage 2; 16%, stage 3; 4%, stage 4; 12% with 70% low grade, 6% intermediate grade and 24% high grade. Marginal zone (MALT) were most common (40%) followed by follicular (16%), small lymphocytic (12%), Mantle cell (8%), diffuse large B cell (DLBC) (8%), primary CNS (4%), plasmablastic lymphoma (4%) and 1 case (4%) of multiple myeloma also included. Two patients in the cohort are deceased: one elderly patient with stage 4 high grade DLBC and one patient with plasmablastic lymphoma. One patient with stage 1AE who was pregnant (22/40) at the time of diagnosis deferred treatment until after delivery. All patients were staged and treatment by oncology and radiation-oncology services. Cataract and dry eye associated with radiotherapy is common.

Conclusions:

Proptosis and ptosis should alert the clinician to suspect lymphoma prompting imaging and biopsy. Most orbital lymphomas are stage 1 and low grade and respond well to treatment. However, one third have disease outside the orbit and one quarter are high grade. Lymphomas presenting in the orbit are potentially life threatening and prompt collaboration with oncology colleagues is essential.

Surgical Outcomes Following Medial Rectus Readvancement for Consecutive Exotropia

Rhatigan M, Stokes J.

University Hospital Waterford, Waterford.

Objectives:

1. To determine if one muscle surgery with medial rectus readvancement is effective in consecutive exotropia.
2. To assess rate of medial rectus muscle slippage as aetiological factor in consecutive exotropia.

Methods:

A retrospective review of 34 adult patients who underwent medial rectus readvancement with adjustable suture in a tertiary strabismus unit under one surgeon over a 2 year period. Standard of success was set as within 15 prism dioptres of orthophoria correlating with other studies.

Results:

34 adult patients with consecutive exotropia underwent medial rectus readvancement over a two year period. Mean preoperative angle 40.0 prism dioptres. Mean postoperative angle of 11.0 prism dioptres. (these results are on 10 patients await PPs). MR found >10mm from limbus intraoperatively in 34% of patients. 75% of patients within 15 dioptres of orthotropia post operatively.

Conclusions:

Medial rectus slippage may be an aetiological factor in consecutive exotropia. MR readvancement appears to be a successful surgical option for consecutive exotropia.

Practice Trends in Management of Unilateral Congenital Cataract in Britain and Ireland

McAnena L, McCreery K, Brosnahan D.

Our Lady's Hospital for Sick Children, Crumlin.

Objectives:

To investigate the practice trends in management of unilateral, uncomplicated congenital cataract in Britain and Ireland and to assess whether the IATS results and/or local contact lens (CL) services influence treatment decisions.

Methods:

An anonymous survey was sent to the BIPOSA member mailing list of 200 recipients.

Results:

There were 56 responses, 39 of which were complete and 55 were Consultant grade. Most responders were from England (74%) and performed 0-10 unilateral congenital cataract operations per year (68%). Aphakia and CL was the most common approach (74.3%) and of these, 62% stated that their treatment choice was influenced by the results of the IATS. Primary IOL was the choice for 20.5% of responders, of whom, 37.5% stated personal preference and 62.5% inadequate CL service influencing this choice. 25.6% stated they practiced primary IOL implantation prior to the IATS but now practice aphakia/CL, while 48.7% said they were practicing aphakia/CL anyway. A majority (74%) of those who practice aphakia/CL said they implant secondary IOLs only cases of poor CL compliance and 41.4% of surgeons implant them after 5 years of age. Most surgeons rated their local CL service as "good" (38.4%), or "very good" (46.2%).

Conclusions:

Aphakia with CL rehabilitation was the most common approach to the treatment of unilateral congenital cataract in infants less than 6 months in this study. The results of the IATS appear to have influenced a change in practice from primary IOL-implantation to aphakia and CL visual rehabilitation in approximately one-quarter of those surveyed.

Paper Session

Wednesday, 16th May – 4.15pm

Quality of Life in Uveal Melanoma Patients – An Irish Perspective

Scannell O¹, O’Neill V¹, Baily C¹, Dunne M², Cunningham M², Horgan N^{1,2}.

¹Mater Misericordiae University Hospital, Dublin,

²Royal Victoria Eye and Ear Hospital, Dublin.

Objectives:

This study investigated general and disease-specific quality of life (QOL) in post-treatment uveal melanoma patients. Comparison was made between enucleation and brachytherapy treatment groups.

Methods:

This was a cross-sectional study comprising a single-centre cohort of uveal melanoma patients in Ireland, treated between June 2010 and June 2017. The EORTC C30 questionnaire was used to assess general QOL, and the EORTC OPT30 questionnaire was used to assess ophthalmic cancer-specific QOL. Questionnaires were completed by 103 brachytherapy patients, and 32 enucleation patients. Categorical variables were analysed using chi-square and Fisher’s exact tests, and continuous variables were analysed using Mann-Whitney U tests.

Results:

There were no significant differences between treatment groups with regard to the overall health, or overall QOL score. Emotional functioning was very similar between treatment groups ($p = 0.586$). No significant difference was found with regard to worry about recurrent disease. A greater proportion of patients post-enucleation had concerns about appearance ($p < 0.001$), and difficulties with driving ($p = 0.036$) as compared with the post-brachytherapy patients. A significant proportion of post-brachytherapy patients had functional problems in their treated eye.

Conclusions:

Overall QOL levels are similar in enucleation and brachytherapy treatment groups. Enucleation patients reported more problems with appearance and driving, and brachytherapy patients reported significant levels of functional difficulty in the treated eye. These factors should be taken into consideration when discussing treatment options, and at post-treatment clinic visits.

Accurate Genetic Diagnosis Impacts the Management of Inherited Retinal Degeneration Pedigrees in Ireland

Stephenson K¹, Dockery A², Carrigan M², Farrar GJ², Keegan D¹.

¹Mater Misericordiae University Hospital, Dublin,

²School of Genetics, Trinity College, Dublin.

Objectives:

To reclassify IRD diagnosis by the combination of accurate phenotyping and genetic diagnosis, changing management of the individual and informing national planning.

Methods:

Review of clinical notes, multimodal imaging and validated outcomes of panel-based next-generation sequencing for retinal dystrophy genes were reviewed in contrast with the presenting clinical diagnosis. 75 of 118 patients had a positive genetic result. The diagnosis was refined with all information in hand and a customised care plan was designed for each patient/pedigree.

Results:

Two exemplar cases highlight the non-therapeutic benefit of a confirmed genetic diagnosis. Patient 1 was a 53y man with a diagnosis of choroideraemia (XL) whose genotype was consistent with autosomal dominant retinitis pigmentosa. Patient 2 was a 45y woman with a diagnosis of sporadic/autosomal recessive retinitis pigmentosa whose genotype was consistent with autosomal dominant RP11. These findings had major implications for relatives/descendants of these individuals, highlighting the importance of accurate and timely genotyping for benefit of more than the individual in question.

Conclusions:

Genetic diagnostics (in conjunction with accurate phenotyping) are important in the investigation and management of IRD even in the absence of available disease-modifying therapeutics. A change in diagnosis guides investigation into appropriate clinical trials and informs appropriate genetic testing of at risk relatives.

Ozurdex: The University Hospital Waterford Experience

Brady R, Ní Mhéalóid A, Doris J.

University Hospital Waterford, Waterford.

Objectives:

'Ozurdex' is a relatively novel implantable depot steroid device designed for the treatment of eye conditions. It is sited through a minor intravitreal injection procedure and acts through the sustained elution of dexamethasone into the vitreous. It has been used for some time in University Hospital Waterford in the treatment of ocular pathologies arising through diabetes, vascular occlusion disorders, and also inflammatory diseases. The objective of this study was to identify patients who have been treated with Ozurdex, and assess their response to treatment. The main aims of the study were:

1. To measure functional outcomes of treatment as determined by visual acuity
2. To investigate anatomical outcomes through fundoscopy and OCT
3. To contrast findings between different aetiologies
4. To compare results between patient demographics

Methods:

Patients receiving ozurdex injections from its introduction in 2014 up to early 2017 were identified; Patient's charts were sourced and information relating to visual acuity and clinical course were documented; Computerised OCT data was mined to generate anatomical end points for comparison; Patients were subdivided into cohorts based on pathology and results were tabulated; Prism was the statistical software used in the study.

Results:

A total of 25 patient's data was mined in this study. This included a total of 52 injection procedures with diverse indication broadly classified under three aetiologies (Figure 1.A). Ozurdex was found to be efficacious at improving patient LogMar visual acuity in all treatment groups of diabetic macular oedema, (n=2) non-infectious uveitis (n=8) and vascular occlusions (n=15) with a range of 0.0-0.54LogMar gains. The average increase of 0.16LogMar (n=52) (Figure 1.B). Anatomical differences fluctuated between groups but were improved overall. Visual improvements did not display a gender or age distribution, indicating that ozurdex is a treatment modality that could be utilized for all groups.

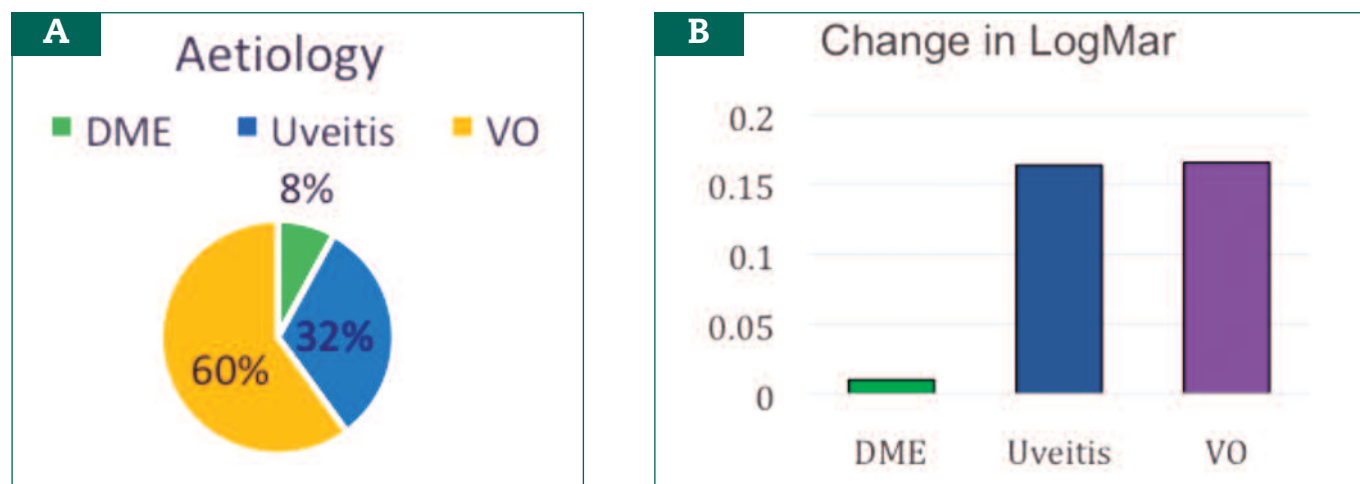


Figure 1. A. Aetiologies of disease treated.

B. Logmar changes with time after treatment.

Conclusions:

Ozurdex has had a positive impact in those who have received treatment to date. In this study both uveitis and VO treatment arms responded similarly, whilst DME was not found to demonstrate the same LogMar benefit, this was n=2 and these patients underwent a treatment as a last attempt effort having failed all previous treatment modalities. Intravitreal delivery of drug depot has the benefit of avoiding systemic steroid side-effects through localized drug delivery. Furthermore these effects are sustained effect over time and avoids user dependent factors. In summary, Ozurdex was found to be of benefit as a treatment adjunct for all treatment groups.

The Role of the Inflammasome in a Model of Dry Age-Related Macular Degeneration

Silke E, Ozaki E, Cahill M, Doyle S.

Royal Victoria Eye and Ear Hospital, Dublin, Trinity College Dublin.

Objectives:

The aim of this project was to determine whether blocking the inflammasome prevents retinal damage in a mouse model of dry AMD.

Methods:

We induced retinal degeneration using sodium iodate (NaIO₃) in wild-type mice and mice lacking apoptosis-associated speck like protein (ASC). ASC is an adaptor protein essential to the formation of inflammasomes. We characterized the retinal appearance using:

- optical coherence tomography (OCT)
- haematoxylin and eosin (H&E) staining
- terminal deoxynucleotidyl transferase dUTP nick end labeling (TUNEL) staining, a marker of cell death
- F4/80 and Iba1 staining, markers of macrophage infiltration and microglial activation respectively

We also performed Western blots on tissue from the retina and RPE/choroid, to assess for the presence and relative concentrations of the cytokines IL-1 β and IL-18.

Results:

The mean retinal outer nuclear layer (ONL) thickness did not differ between wild-type and ASC knock-out mice at day 1 (12.2 ± 1.3 cells in wild-type vs 12.3 ± 1.4 cells in ASC knock-outs, $p > 0.99$), day 2 (10 ± 0.7 cells vs 11 ± 0.7 cells, $p = 0.07$), or at day 7 (8.7 ± 1.2 cells vs 8.5 ± 1.7 cells, $p = 0.39$) following administration of sodium iodate. Similarly, on OCT, the ONL thickness at day 7 was $40.6 \pm 3.2 \mu\text{m}$ in wild-type mice and $40.9 \pm 3.9 \mu\text{m}$ in ASC knock-out mice ($p = 0.36$). The immunohistochemical staining was equivalent between the two groups.

Conclusions:

Preventing the formation of inflammasomes by blocking ASC did not lead to a reduction in the damage to the retina caused by sodium iodate. This suggests that the injury in this model is inflammasome-independent. Further research should focus on other pathways. One such pathway is mediated by caspase 11, and here we present preliminary findings showing the protective effect of blocking caspase 11 in this model.

Evaluation of Real-Life Clinical Outcomes of Treat-and-Extend Regimen for Wet Age-Related Macular Degeneration

Minasyan D, O'Connell A, Stephenson K, Henry E.

University Hospital Waterford, Waterford.

Objectives:

To evaluate the clinical effectiveness and treatment outcomes of the treat-and-extend (T&E) regimen for management of wet age related macular degeneration (wARMD) over an eighteen month period in University Hospital Waterford (UHW).

Methods:

A retrospective analysis of best corrected visual acuity (BCVA), Optical Coherence Tomography (OCT) findings and treatment intervals was undertaken on patients undergoing intravitreal therapy for wARMD between July 2016 and January 2018 in the Macular Service at UHW.

Results:

A total number of 167 eyes in 145 patients were included in this study. Mean wait time for treatment was 37.1 days (range 2 days - 9 months). 45% of eyes were treatment naïve. Mean follow up was 11.0 months (range 6-18). Visual acuity: Mean BCVA pre- treatment was LogMAR 0.70 (range 0.20- 2.70). Mean BCVA post treatment was LogMAR 0.58 (range 0.10-1.40). 49% of eyes showed an improvement in BCVA. 32% achieved stable BCVA. 19% had a deterioration in visual acuity. OCT findings: Central retinal thickness showed improvement with treatment from a mean of 308.1µm pre-treatment to 210.3 µm post treatment. 21.5% had macular scarring evident prior to commencing the T&E regimen and 50.8 % of these were treatment naïve. Treatment data: 67% of eyes received Bevacizumab therapy, with 19% receiving Aflibercept and 14% Ranibizumab. The mean number of injections was 7.1(range six - 16). 21% achieved an interval of twelve weeks. 25% required recommencement of more frequent therapy during the follow-up period.

Conclusions:

This review of real-life outcomes of the T&E regimen for wARMD demonstrated a favourable outcome for patients. This regimen has been shown to be clinically effective and is less burdensome on patients than the alternative PRN treatment with monthly monitoring. Worse outcomes were associated with delayed treatment, previous intravitreal therapy and macular scarring.

Vitreous Loss as a Complication of Trainee Performed Cataract Surgery: The Use of a Pre-Operative Scoring System for the Selection of Appropriate Cases to be Performed by Trainees

Mongan AM, Ellard R, O'Reilly P, Tuwir I, Hickey- Dwyer M.

Limerick University Hospital, Limerick.

Objectives:

To characterise the difficulty profile of patients undergoing complicated cataract surgery using the Habib cataract surgery risk score, and to audit case mix complexity of trainees.

Methods:

Retrospective review of all patients over a three-year period who had phacoemulsification surgery complicated by vitreous loss. Information was entered into a pre-devised proforma and the results analysed.

Results:

Data were extracted on 2987 cataract operations performed at Limerick University Hospital by surgeons between March 2015 March 2018. During this three-year time period, 74 surgeries were complicated by posterior capsule rupture (PCR) requiring anterior vitrectomy (AV) giving an overall rate of 2.5%. Non-consultant trainee surgeons performed 770 surgeries; 27 of these surgeries resulted in PCR requiring AV, giving a trainee PCR rate of 3.5% (consultants 2.1%, specialist registrars 4%, registrars 1.8%, surgical house officers 5.4%). Cases were rated as per the Habib score; cases scoring 1 are suitable for all trainees; cases scoring 2 are suitable for trainees who have performed at least 50 cataract surgeries; >3 are suitable for trainees who have performed over 200 phacoemulsification surgeries (Osborne 2009). PCR cases performed by consultants had an average difficulty score of 2.9 (range 1-6), compared to 2.7 for specialist registrar trainees (range 0-6) and 1.7 for other trainees (range 0-4).

Conclusions:

Our trainee PCR with AV rate of 3.5% compares well other studies which report vitreous loss rates or 3.1-6.9% for phacoemulsification performed by trainees (Blomquist 2010). The Habib score may be used both to define risk of complications, and to rate difficulty of cases to ensure appropriate complexity of cases for trainees.

Blomquist PH, Sargent JW, Winslow HH. Validation of Najjar-Awwad cataract surgery risk score for resident phacoemulsification surgery. *J Cataract Refract Surg.* 2010 Oct;36(10):1753-7. Osborne SA1, Severn P, Bunce CV, Fraser SG. The use of a pre-operative scoring system for the prediction of phacoemulsification case difficulty and the selection of appropriate cases to be performed by trainees. *BMC Ophthalmol.* 2006 Dec 27;6:38.

Sulphur Hexafluoride Gas (SF₆) as a Tamponading Agent in Retinal Detachment Surgery

McSwiney T, Cullinane A.

Cork University Hospital, Cork.

Objectives:

To evaluate the outcomes and complications of exclusively using sulphur hexafluoride gas(SF₆) as a tamponading agent in primary retinal detachment surgery(RRD).

Methods:

A retrospective review of a single surgeon's pars plana vitrectomy cases for primary RRD surgeries over a five-year period. SF₆ gas was exclusively used for all retinal detachments requiring gas tamponade during our study period. One hundred and nine eyes from one hundred and seven patients were identified. The mean age at surgery was 59.72 years (range, 30-82 years) and the mean length of follow up was 49.9 months (range, 9 – 83 months). Primary outcome measures included pre- and postoperative best-corrected Snellen visual acuity (BCVA), pre- and postoperative intraocular pressure (IOP) measured by Goldmann applanation tonometry, rates of postoperative complications, including re-detachment, ocular hypertension or hypotony and visually significant cataract formation. Further subgroup analysis was undertaken examining groups considered more complex. These included patients with inferior breaks, proliferative vitreoretinopathy, previous cataract surgery and macula off detachments.

Results:

For all eyes, the anatomical success rate was 97.25% at last follow up visit, which was greater than nine months in all cases. Mean preoperative BCVA improved from LogMAR 1.11 (SD 0.89, confidence interval (CI) (0.95-1.27) to 0.36 (0.29, 0.3-0.41) six months post-surgery, $P < 0.0001$. Postoperative BCVA improvements were found in all subgroup analysis. Eyes with inferior detachments improved from LogMAR 0.89 (0.78, 0.63-1.14) to 0.39 (0.37, 0.26 – 0.51), $P = 0.0002$. The pseudophakic group improved from LogMAR 1.27 (0.8, 0.94-1.61) to 0.30 (0.25, 0.19-0.41), $P < 0.0001$. Eyes with macula off detachments improved from LogMAR 1.45 (0.76, 1.27-1.63) to 0.41 (0.31, 0.34-0.49), $P < 0.0001$ and those who presented with proliferative vitreoretinopathy (PVR) improved from LogMAR 1.34 (0.81, 1.10-1.58) to 0.37 (0.26, 0.32-0.47), $P < 0.0001$. Elevated postoperative intraocular pressure (IOP) that required topical treatment occurred in eighteen cases (16.51%). Forty-eight cases subsequently developed a symptomatic cataract that required surgical intervention. This represented 56.47% of the phakic population of the study and occurred, on average, 22.1 months post RRD repair surgery. The mean intraocular lens(IOL) strength used was 16.8 diopters(D) (range, 6 – 23). There were no cases of postoperative endophthalmitis observed during this study.

Conclusions:

The result of this retrospective, single centre study indicates that SF₆ gas tamponade has a favourable outcome in the management of RRD. This extended not only with the perceived more straightforward superior detachments without PVR but also in patients who were pseudophakic, had extensive inferior breaks and those with a presence of PVR.

Vitreous Biopsies: Indications, Results and Patient Outcomes in University Hospital Galway, 2010-2016

Hughes E¹, O'Rourke M¹, Cormican M¹, Kinsella F¹, Townley D¹.

¹University Hospital Galway,

²Department of Microbiology, University Hospital Galway.

Objectives:

The primary objective of this study was to identify all cases of vitreous biopsy in University Hospital Galway between January 2010 and December 2016. The secondary objective was twofold. Initially, an analysis of the indication for vitreous biopsy, method used and culture results/sensitivities was sought. This was followed by an assessment of outcomes from those identified cases of endophthalmitis.

Methods:

The microbiology laboratory identified all cases of vitreous biopsy by carrying out a computer system search for all specimen types or specimen sites labelled 'vitreous'. Case notes were reviewed and the above parameters recorded.

Results:

10 vitreous biopsies were carried out during this period. An organism was isolated in 9 cases, either by culture or PCR. This included bacterial, viral and fungal organisms. The case mix included penetrating trauma, recent phacoemulsification, vitrectomy or intravitreal injection, and one vitreous biopsy for posterior segment inflammation. No cases of antimicrobial resistance were identified. In cases of post-operative and post-traumatic endophthalmitis, time to presentation, visual outcomes and late complications are discussed.

Conclusions:

In our series, vitreous fluid showed a high yield for identifying an organism by either culture or PCR, taken by needle aspirate or vitrectomy cutter. Anti-microbial resistance was not identified as a challenge in managing the cases of endophthalmitis identified here. Of the nine cases treated as endophthalmitis, three patients ultimately had no perception of light. A further three had vision better than 6/12. The final level of vision related to the causative organism.

National Waiting Times for Treatment of Patients with AMD

Whitlow S¹, O'Connell E².

¹Royal Victoria Eye & Ear Hospital, Dublin,

² Cork University Hospital, Cork.

Objective:

To ascertain the average and median times patients have to wait for treatment with anti VEGF for AMD and compare it with the Royal College of Ophthalmologists guidelines.

Methods:

Four hospitals were included in the study and the HIPE office was contacted in each hospital. A list of patients with primary diagnosis of AMD (H353) and a procedure of administration of therapeutic agent into the posterior chamber was ascertained. The years included in the study were from 2011-2016. Any patient who had treatment from 2011 -2015 was excluded and only newly diagnosed patients from 2016 were used for the study. IT services in each hospital were contacted to establish the boarding/listing date of the injections administered to this group of patients. The waiting time for AMD treatment for each patient was calculated and an average waiting time was identified.

Results:

The waiting time for patients receiving treatment for AMD are longer than the guidelines set by the Royal College of Ophthalmologists.

Conclusion:

The Royal College of Ophthalmologists recommend a waiting time of two weeks for AMD treatment. This study found that patients are waiting longer for treatment.

Bone Marrow-Derived Cell Recruitment to the Neurosensory Retina and Retinal Pigment Epithelial Cell Layer following Subthreshold Retinal Phototherapy

Kent D¹, Caballero S², Sengupta N², Li Calzi S³, Shaw L³, Beli E³, Moldovan L³, Dominguez J⁴, Moorthy R⁵, Grant M³.

¹The Vision Clinic, Kilkenny, Ireland,

²Pharmacology and Therapeutics, University of Florida, Florida,

³Eugene and Marilyn Glick Eye Institute, Indiana University School of Medicine, Indianapolis,

⁴Department of Medicine, Indiana University School of Medicine, Indianapolis,

⁵AVRUC, Indiana University Medical Centre, Indianapolis.

Objective:

The current study evaluated if Subthreshold retinal phototherapy (SRP) lead to recruitment of hematopoietic stem cells (HSCs) to the retina.

Methods:

GFP chimeric mice underwent SRP in one eye using the Iridex OcuLight SLx MicroPulse laser. Retinal mRNA expression for heat shock proteins (HSPs), HIF-1 α , VEGF, CXCL-12 and CXCR-4 was determined.

Results:

GFP⁺ cells migrated to the RPE layer in a duty cycle-dependent fashion. hsp70 mRNA peaked at 2 hours post laser in the neural retina and at 4 hours in the posterior cup. mRNA for hsp90 dramatically peaked in both the NSR and the posterior cup at 2 hours. mRNA for CXCL-12 and its receptor CXCR-4 in the posterior cup occurred 2 hours post laser and increased further by 4 hours. HIF1- α mRNA was reduced at 2 hours but increased at 4 hours but only in the posterior cup. VEGF mRNA increased at 4-6 hours post laser.

Conclusion:

HSCs are recruited to the retina following SRP. We propose that SRP stimulates the RPE and its extracellular matrix resulting in the induction of HSPs followed by the release of the CXCL-12 and VEGF cytokines that result in the mobilization and homing of bone marrow-derived stem cells to the retina where they participate in repair of the retina.

Improved Optic Nerve and Visual Function Following Panmacular Subthreshold Diode Micropulse Laser (SDM) for Glaucomatous Optic Neuropathy

Kent D¹, Samples J², Lum B³, Luttrull J³.

¹The Vision Clinic, Kilkenny,

²The Eye Clinic, Portland, Oregon,

³Private Practice, Ventura, California.

Objective:

To determine the effect of panmacular subthreshold diode micropulse laser (SDM) on optic nerve function in eyes with glaucomatous optic neuropathy (GON).

Methods:

A medical records review identified all patients with advanced primary open angle glaucoma (POAG) evaluated by visually evoked potential (VEP) testing before and after SDM treatment.

Results:

88 eyes of 48 consecutive patients were included for study, 20 male and 28 female, aged 57-94 (avg. 79). All patients had GON and visual field loss prior to treatment. Pretreatment, IOPs ranged 6-23mm Hg (avg. 13) on 0-3 (avg. 1.6) medications. 33 eyes had had prior glaucoma surgery. Snellen visual acuities (VA) ranged 20/15 to count fingers (median 20/60). Prior to treatment, both VEPs and ORPs of all eyes were abnormal. Following SDM, Best corrected (BC) Snellen VA ($p=0.005$), VEP P1 amplitudes ($p=0.001$), and BC logMAR mesopic VA and automated perimetry were significantly improved ($p<0.0001$ each). IOP was unchanged. There were no adverse treatment effects.

Conclusion:

Panmacular SDM produced significant improvements in optic nerve function by VEP, chart VA, mesopic VA and automated perimetry. These improvements were achieved without IOP lowering. Further study is indicated to determine if SDM might aid the clinical management of glaucoma, particularly in eyes with controlled IOPs.

Paper Session

Thursday, 17th May – 11.00am

Eckardt Temporary Keratoprosthesis Insertion for Pars Plana Vitrectomy in a Blood-Stained Cornea

Ní Mhéalóid Á, Doris J, Higgins G.

Waterford Regional Hospital, Waterford.

Objectives:

To demonstrate through video footage, the use of an Eckardt temporary keratoprosthesis in a blood-stained cornea, enabling visualisation for pars plana vitrectomy in the case of a traumatic retinal detachment, and subsequent replacement with a penetrating keratoplasty.

Methods:

A 60-year-old highly myopic female requiring a left pars plana vitrectomy for retinal detachment repair developed corneal blood staining secondary to a traumatic suprachoroidal haemorrhage. Anterior chamber washout was a failure. Subsequently, an 8mm Eckardt prosthetic cornea was sutured using six 6/0 silk sutures to the residual host cornea after an 8mm trephination. This facilitated removal of the intraocular lens and an adequate view for attempted retinal detachment repair. The keratoprosthesis was then replaced with an 8.25mm donor corneal graft and sutured with 16 10/0 nylon sutures.

Results:

The penetrating keratoplasty remains clear over two months post-operatively. Unfortunately, the retinal detachment repair was unsuccessful due to the extensive ocular trauma.

Conclusions:

The Eckardt temporary keratoprosthesis facilitates simultaneous vitreoretinal and penetrating keratoplasty surgery in cases of corneal clouding.

Four Muscle Tenotomy Surgery for Improvement of Vision in Congenital Nystagmus – the Difference Between Driving and Not Driving.

Treacy M, McCreery K.

Our Lady's Children's Hospital, Crumlin.

Objectives:

Firstly, we aim to describe the case of a 16 year old girl who underwent the operation of four-muscle tenotomy for improving vision that was reduced secondary to congenital nystagmus. We also aim to present a synopsis of the current literature supporting this relatively new approach to the management of this condition.

Methods:

The procedure was indicated for horizontal congenital nystagmus with no null-point and no strabismus. The procedure involves dis-insertion of all four horizontal recti and re-insertion at the original position. Visual acuity and character of the nystagmus were measured pre- and post-operatively. Videos of the eye movements were also recorded before and after.

Results:

The visual acuity improved from right - 6/24, left - 6/24 and both eyes together - 6/24 before the operation to right - 6/9.5, left - 6/7.5 and both eyes together - 6/9.5. The improvement in visual acuity was accompanied by a significant reduction in the amplitude of nystagmus as evidenced by the videos (for presentation). The patient was discharged at the age of 17 and passed all the visual requirements for driving.

Conclusions:

Four muscle tenotomy surgery without recession is a relatively new technique first coming to prominence in the early 2000s. It has been shown to be an effective procedure at improving visual acuity and reducing the amplitude of nystagmus in patients with congenital nystagmus.

Corneal Neurotisation: An Irish First

Power B, Pilson Q, Fulcher T.

Mater Misericordiae University Hospital, Dublin.

Objectives:

To provide an overview of the indications and benefits of corneal neurotisation. A video demonstration of the first case performed in Ireland will be presented.

Methods:

The first corneal neurotisation in Ireland was performed in MMUH on the 14/2/18 in conjunction with the plastic surgery department. The case was recorded on the operating microscope and by hospital photography. We will demonstrate the technique and provide information on suitable future candidates for referral.

Results:

Results to follow outpatient follow up scheduled for late April/early May.

Conclusions:

International studies show the procedure to be an effective means of restoring corneal sensation in patients and improving corneal health. We hope to replicate these results.

How the Tear Film can Affect the Ocular Surface and the Perception of Vision

Gallagher D, Fahy G.

University Hospital Galway, Galway.

Objectives:

This study's purpose is to assess the relationship between tear film osmolarity and ocular surface structure and function.

Methods:

We evaluate the effect of tear film osmolarity on the repeatability of keratometry values, visual function and how osmolarity impacts perceptions of quality of vision (QoV). 33 subjects were prospectively recruited based on tear osmolarity; >316 mOsm/L (hyperosmolar; $n=45$) and ≤ 316 (normal osmolar; $n=18$). Baseline and repeat K's were measured within 5 weeks of each other with IOLMaster®. Variability in average K, calculated through corneal power vector analysis was compared between groups. Visual acuity, final IOL calculation, contrast sensitivity and QoV through questionnaire format were compared between both osmolarity groupings.

Results:

There are non-significant differences in repeated K measurements across the osmolarity spectrum ($p>0.05$). The hyperosmolar group showed a wider variation in cylinder power relative to normal eyes, $p=0.07$. Corneal vector power analysis showed a non-statistically significant difference across the range of osmolarities ($p>0.05$). All three categories of symptoms in the QoV questionnaire were found to be significantly affected in the hyperosmolar group compared with the normal group ($p=0.0026$ for frequency, 0.0031 for severity, 0.0081 for bothersome). Final IOL calculation was more variable in the hyperosmolar group. A poorer visual acuity and lower contrast sensitivity was not significantly related to increasing osmolarity.

Conclusions:

There is some evidence to suggest that corneal structure is affected in hyperosmolar patients, but K readings are largely repeatable across the osmolarity spectrum. Quality of vision is affected in hyperosmolar patients.

Predisposing Risk Factors, Clinical and Microbiological Characteristics of *Moraxella Keratitis*

McSwiney T, Knowles S, Murphy C.

Royal Victoria Eye and Ear Hospital, Dublin, Royal College of Surgeons, Dublin.

Objectives:

To determine the epidemiology, clinical findings on presentation, predisposing risk factors and microbiological spectrum, management, and treatment outcomes of *Moraxella keratitis* in a single centre.

Methods:

A retrospective review of all patients who were diagnosed with *Moraxella keratitis* between November 2012 and December 2017 at the Royal Victoria Eye and Ear Hospital, Dublin. We used the MALDI-TOF method of microbiological identification to perform *Moraxella* sub-species identification.

Results:

41 cases of *Moraxella keratitis* were identified. The most common appearance on presentation was an oval shaped paracentral infiltrate with a mean diameter of 4.2mm. Potential predisposing local and systemic risk factors were present in 68% and 46% of cases respectively. Previous ocular surgery and diabetes were the most common local and systemic risk factors. Secondary surgical procedures were required in 9 (22%) cases, and these included evisceration (3; 7%) corneal gluing (3; 7%), penetrating keratoplasty (3; 7%), surgical tarsorrhaphy (3; 7%) and botox induced ptosis (2; 5%). The mean time to complete corneal epithelialisation was 32 (range 7-109) days and the mean duration of topical antibiotic therapy was 54 (range 9-124) days. Antibiotic susceptibility testing demonstrated 100% sensitivity to ofloxacin, chloramphenicol and cefuroxime. Mean presenting and final visual acuity were 0.99 ± 0.50 (Snellen equivalent 6/60) and 0.56 ± 0.53 (Snellen equivalent 6/24), respectively excluding patients with a visual acuity of PL. Subspecies analysis revealed identification of *M. nonliquifaciens* (16; 39%), *M. lacunata* (15; 36%), *M. osloensis* (4; 10%), *M. catarrhalis* (2; 5%) and without subspecies identification in 4 cases (10%). *Moraxella nonliquifaciens* and *lacunata* were associated with larger infiltrates on presentation ($p < 0.05$), required more surgical intervention, longer treatment duration ($p < 0.001$) and follow up.

Conclusions:

This study has confirmed a 9-fold increase in the number of cases of *Moraxella keratitis* at our institution from 2003 to 2017. We have demonstrated the value of *Moraxella* subspecies identification using MALDI-TOF mass spectrometry by reporting significant differences in the clinical features and prognosis of *M. nonliquifaciens* and *M. lacunata* compared with other subspecies.

Alcohol Delamination of the Corneal Epithelium for Recurrent Corneal Erosion Syndrome

Ní Mhéalóid Á, Lukasik T, Power W, Murphy C.

Royal Victoria Eye and Ear Hospital Dublin, Royal College of Surgeons of Ireland Dublin.

Objectives:

Recurrent corneal erosion syndrome (RCES) is a chronic relapsing clinical disorder involving the corneal epithelium and epithelial basement membrane. It is characterized by repeated episodes of corneal epithelial breakdown causing pain, photophobia, lacrimation, and corneal scarring which can lead to loss of vision. The aims of this study were to evaluate the outcomes of alcohol delamination (ALD) of the corneal epithelium for the treatment of RCES and to implement a standardised treatment protocol for this condition utilising evidence based practice and the findings of an internal audit.

Methods:

A retrospective analysis of 42 eyes of 40 patients diagnosed with RCES who were treated with ALD between January 2006 and March 2016 was conducted. Data was analysed using Microsoft Excel (Microsoft Excel for Mac Version 15.18 2015, Seattle Washington, USA) and GraphPad Prism (GraphPad Prism version 7 for Mac, GraphPad Software, La Jolla California USA). Statistical significance was attributed when $p < 0.05$.

Results:

The mean age at the time of ALD was 41.17 years (standard deviation [SD] 13.44). Patients were followed for an average of 12.8 months (SD 15.65). The majority were female (52.5%, $n=21$) and the majority of eyes treated with ALD were left eyes (62.9%, $n=26$). Trauma was the primary aetiology in our study population. Treatment was successful in 73.8% ($n=31$) of eyes and in 75.0% ($n=30$) of patients. Recurrence occurred in 26.2% of eyes at a mean of 10.41 months (SD 12.63) post treatment.

Conclusions:

ALD is an efficacious and cost-effective primary surgical intervention for RCES.

A Retrospective Analysis of Patients with Ocular Graft Versus Host Disease Requiring Autologous Serum Drops

Lyons C, Lennon D, Doyle A.

Royal Victoria Eye and Ear Hospital Dublin, St James Hospital, Dublin.

Objectives:

To review the charts of patients with most severe ocular graft versus host disease to ascertain if there are any common risk factors or predisposing factor.

Methods:

Retrospective analysis of 9 patient charts where autologous serum drops for management of graft versus host disease. Patient demographics, haematological disease status, type of stem cell graft was reviewed. The patients' ocular and systemic management was assessed.

Results:

Of the patients 7 were male. The average age was 46 years range (21-65)

Of the 9 patients 2 had chronic myeloid leukemia, 2 had chronic Lymphoid leukaemia, 2 large B cell lymphoma, 1 nodular sclerosing hodgkins disease, 1 Fanconi anaemia, 1 myelodysplastic syndrome. The duration between stem cell transplant and referral to ophthalmology services ranged from a few days to 12 years. 6 had matched stem cell transplants 3 did not. All had systemic GvHD but in only 3 did the ocular symptoms occur at the same time as the systemic involvement.

Conclusions:

In this small cohort of ocular GvHD there were no identifiable common risk factors. On the contrary this interesting cohort illustrates the heterogeneity of the condition. The presentation will also discuss the progress of the patients. The basic pathophysiology of the condition as well as a literature review of recent research will also be discussed.

Influence of Phakic Intraocular Lens Implantation on Endothelial Cell Count and Optical Coherence Tomography Measurements after a Minimum of 4 Years Follow-Up

Baily C, Woods B, O’Keeffe M.

Mater Private Hospital, Dublin.

Objectives:

Phakic intraocular lenses have stable and predictable visual outcomes. However, the effect of the implant on long-term endothelial cell count (ECC) has remained a matter of debate. Our study looked at the long-term impact of phakic intraocular lenses on endothelial cell count.

Methods:

Retrospective observational study. Hospital setting. Two hundred and twenty-nine subjects (one hundred and twenty-six eyes) with phakic intraocular (IOL) iris-claw lenses (Artisan, Artiflex, Ophtec BV) implanted from 2002 to 2010 followed for a mean of 7.4±2.4 years. ECC and OCT measurements were carried out annually.

Results:

We demonstrated a mean ECC loss of 17.4% at 10 years. The ECC loss had no correlation with IOL position on OCT.

Conclusions:

We have demonstrated that there is no significant impact on endothelial cell count following four to ten years following phakic intraocular lens implantation. This may be attributed to that fact that all implanted lenses in our study respected the ‘safety zone’ distance criteria, thus, highlighting the importance of strict inclusion criteria.

Repair of Globe Rupture and Penetrating Globe Injuries in University Hospital Galway: A 24 Month Retrospective Review

Hughes E, Fahy G.

University Hospital Galway, Galway.

Objectives:

To identify the outcomes of globe injury repair in UHG in the 24 month period between January 2014 and December 2015. The nature of the injury, vision and exam findings at presentation, and intra-operative findings were each compared to outcomes. Outcomes included vision at most recent follow-up, the development of complications, and the need for further surgery.

Methods:

A review of theatre logbooks identified all relevant cases; ‘globe rupture repair’, ‘penetrating injury repair’. A review of charts for the above parameters was undertaken.

Results:

There were 12 repairs carried out in the period of the study. 9 cases were the result of a blunt injury, and 3 due to penetrating injury with a sharp object. 1 case was excluded as full clinical details were not available. 4/11 cases were due to alleged assault, 3/11 due to mechanical falls, and the remainder were a mix of workplace accident, self-inflicted, hammering injury, and accidental penetration from a glass fragment. 7/11 cases were males under 35 years of age, almost twice as common as patients over 35. 5/11 had a history of previous ocular surgery.

Conclusions:

Injuries resulting from a blunt trauma had worse visual outcomes to those from sharp/penetrating traumas, with no blunt traumas acquiring 6/6 vision longterm. All eyes with PL/NPL vision developed pthisis. When grouped according to age, young males suffered globe injury from workplace injuries or assault (often involving alcohol consumption), whereas those aged >75 years suffered from mechanical fall, and had a history of previous ocular surgery. There were no cases of endophthalmitis. Further surgery was required in a minority of cases. This review informs our ability to formulate a prognosis relative to the nature of injury. It also highlights the preventative nature of injuries in the younger population.

Paper Session

Friday, 18th May – 11.00am

Hydroxychloroquine and Chloroquine Retinopathy: Audit on Referrals to a Tertiary Ophthalmic Centre and Recommendations for Future Referrals

Murtagh P, O'Halloran O, Fahy G.

University Hospital Galway, Galway.

Objectives:

Efficacy of hydroxychloroquine has been recognised in the treatment of many autoimmune diseases and its use is increasing. Chloroquine retinopathy appears to have a prevalence of 7.5% which is dose and duration dependant and associated with renal insufficiency and contaminant tamoxifen use. Extrapolating from English data it is estimated that there are approximately 22,000 patients on hydroxychloroquine in Ireland. There is currently increasing pressure on ophthalmology departments to screen an enlarging number of patients and there has been no standardisation of referral. The aim of this audit is to review the referral letters from all patients referred to ophthalmology on the basis of hydroxychloroquine screening from July 2015 to December 2017 and to examine how much information has been given in each referral. We will examine if the dose the patient is taking, their renal function and contaminant use of tamoxifen is mentioned by the referring physician in the letter. We subsequently obtained the patient's weight and renal function and stratified patients who we deemed to be high risk. As a secondary outcome we analysed reliability of Humphrey's 10-2 fields. We hope to introduce a standardised referral form for referring patients to be utilised across the country to help in delivering this screening service.

Methods:

A retrospective audit was conducted over a 30 month period of all hydroxychloroquine screening referrals to the Ophthalmology Department in Galway University Hospital. We collected data including indication, dose of hydroxychloroquine, weight of the patient, renal function, contaminant tamoxifen use and audited each referral letter for amount of information supplied. We also examined HVF 10-2 of all patients and their reliability and efficacy at predicting macular changes.

Results:

Over the course of 30 months n=178 patients were referred to the Ophthalmology department in Galway for Hydroxychloroquine screening. 151 (84.8%) were female and 27 (15.2%) were male. The majority of referrals from rheumatology (44.4%) and dermatology (44.4%) with rheumatoid arthritis, SLE and sarcoidosis the main indications for hydroxychloroquine treatment. Dosages ranged from 100mg (1.1%) to 400mg daily (68.0%). All of the referrals letters had the dose and indication on them but none of them stated weight, renal function or if tamoxifen was also being taken. 168 had weights obtainable and of these 39% were on a dose of greater than 5mg/kg and 16.5% had an estimated glomerular filtration rate of less than 50ml/min/1.73m² which would stratify them into being high risk for maculopathy. With regards the reliability of HVF 10-2, 24% showed significant visual field defects with only 1% of these having macular changes on OCT.

Conclusions:

Hydroxychloroquine maculopathy is a growing concern with ever increasing numbers of use. The SPC of hydroxychloroquine states that it can be used in a dose up to a max of 6.5mg/kg without indicating an increased macula toxicity at 5mg/kg. The proportion of patients on high dose (>5mg/kg), poor renal function secondary to rheumatological disease and the restriction in the posology of the actual tablets are putting patients at risk. We aim to highlight this risk and introduce a referral form which will have renal function, weight and tamoxifen use as a baseline which will emphasis to the prescriber those at higher risk and if they could control their symptoms on a lower dose.

An Audit of Visual Field Monitoring of Idiopathic Intracranial Hypertension in Sligo University Hospital and Letterkenny General Hospital

Bourke, C. Malone, C. Chetty, S.

Sligo University Hospital, Sligo.

Objectives:

We aimed to assess current visual field monitoring, and presence of vision loss, among idiopathic intracranial hypertension (IIH) patients attending Sligo University Hospital (SUH) and Letterkenny General Hospital (LGH).

Methods:

Inclusion criteria were patients attending SUH or LGH with new diagnosis of IIH between the three year period 2015- 2018. Medical charts were reviewed, and data collected included diagnosis of IIH, date of diagnosis, VA on presentation, first VF post diagnosis, and follow-up VF testing frequency.

Results:

A total of 25 patients (19 women and 6 men), with mean age 37 years (range 14-61) were included. Mean time between diagnosis of IIH and first VF test was 2 months (range 3 weeks to 2 years). Upon diagnosis, VA was recorded in 70%. In all cases initial VA was 6/6, one patient had a significant drop of VA of 2 lines on Snellen chart. Subsequent VF testing was variable; VF testing every 3 months for 2 years was carried out in only 12%, whereas most patients, 78%, had annual VF testing performed. Non-attendance for VF testing occurred in 16%. Patient weights were not documented in the majority; 24% had weights recorded in the medical notes.

Conclusions:

This audit shows the demand for visual field testing in IIH, and the delay between diagnosis and first visual field assessment in our service. Implementation of a guideline relating to visual field testing and ongoing ophthalmology follow-up may be beneficial.

Five-Year Audit of IOL Exchanges at the Royal Victoria Eye and Ear Hospital

Cummings B, Huang J, Loane E.

Royal Victoria Eye and Ear Hospital, Dublin.

Objectives:

To identify the reasons for and incidence of all IOL exchange surgeries carried out at the Royal Victoria Eye and Ear Hospital over the past five-year period.

Methods:

Theatre records from Jan 2013 to April 2018 were analysed to identify all cataract and IOL exchange surgeries performed during the interval. The reasons for all individual IOL exchange surgeries was determined by review of the patients' medical records.

Results:

Approximately 12,000 cataract surgeries were performed at RVEEH between 2013-2018, out of which 30 (0.25%) [final numbers to be confirmed] IOL exchange surgeries were identified. Final analysis of the reasons for IOL exchange in the cohort will be presented.

Conclusions:

IOL exchange can be performed following initial implantation of an incorrect IOL. The reasons for incorrect IOL implantation are multifactorial and varied. The cases identified through this audit likely represent only a small proportion of incorrectly selected lenses, as many events likely go unnoticed. Robust IOL selection protocols and greater awareness of the issue will reduce the requirement for such surgeries in the future.

Evaluation of Outpatient Referrals to the Ophthalmology Department, University Hospital Limerick; A Look to the Future.

Ellard R, Lyons C, Tuwir I, Hickey-Dwyer M.

Ophthalmology Department, University Hospital Limerick, Limerick.

Objectives:

The National Clinical Programme for Ophthalmology "Model of Eye Care" recommends the development of multidisciplinary primary eye care teams. This will allow for more specialised care to be delivered in tertiary ophthalmology departments. Another recommendation is for standalone high volume cataract units. This study looks at referral patterns with an aim to help plan future ophthalmology services in the Mid-West region.

Results:

The majority (55%) of referrals were from general practitioners, with the remainder coming from optometrists (27%), hospital medical teams (11%) and community medical ophthalmologists (7%). 53% of the patients were male and 47% female. The mean age was 51 with a range between 4 months and 94 years and 59% of those referred being over 50 years. The majority of the referrals were received by fax or post. 33% of referrals were for cataracts and 46% of all referrals could have been dealt with in primary care centres.

Methods:

A prospective review of 100 referrals to the ophthalmology department outpatient clinic in January 2018 was performed. Demographics, origin of referral, reason for referral and referral method were noted. They were categorised into medical and surgical cases.

Conclusions:

The findings support the development of fully equipped eye care centres in the community managed by medical ophthalmologists. A detailed breakdown of the referrals will be discussed and proposals on establishing continuity of care between the community and University Hospital Limerick outlined.

Visual Snow – A Case Series

Doolan E, Logan P, Goëtz R.

Beaumont Hospital, Dublin.

Objectives:

Although seldom recorded in the medical literature, the 'visual snow' phenomenon, as described by patients, leads to a sometimes distressing visual condition and often to multiple unnecessary investigations and inappropriate treatments. We aimed to describe the clinical phenotype of our patients with visual snow; also to identify additional visual symptoms and comorbidities.

Methods:

Medical records of 8 patients referred to neuro-ophthalmology with positive visual phenomena were reviewed retrospectively. All patients had undergone a careful history and complete clinical ophthalmic examination. Most of them had undergone electrophysiology assessment and neuroimaging. All 8 patients were interviewed again.

Results:

The group of subjective visual complaints that has been termed 'visual snow' is syndromically consistent from one case to the next. This phenomenon is reported by young and healthy individuals, with neither ophthalmic nor neurological disease. All these patients had normal ocular examinations, normal neuroimaging, and normal electrophysiological studies.

Conclusions:

Patients can be reassured that the condition, although sometimes disabling, is benign, in the sense, that it does not lead to visual loss. Special investigations may still be required for patient reassurance, but in this group of patients did not assist in the diagnosis which must be made on a clinical basis.

Review of the Clinical Presentation and Relation between CSF Opening Pressure and Loss of Visual Function in Patients with Idiopathic Intracranial Hypertension (IIH) at University Hospital Waterford

Salih A, Cosgrave E.

University Hospital Waterford, Waterford.

Objectives:

To describe a cohort of patients with Idiopathic Intracranial hypertension attending University Hospital Waterford. To describe the spectrum of clinical presentations in those with IIH. To describe the relationship between loss of visual function and opening CSF pressure at diagnosis.

Methods:

This was a retrospective review of all patients with Idiopathic Intracranial Hypertension attending a dedicated neuro-ophthalmology clinic jointly managed by an ophthalmologist and neurologist. Case notes of all patients were reviewed. Data was then analyzed by SPSS.

Results:

It was found that 100% of the study population were females. Mean age was 30 years old with a BMI of 37. 100% had obesity as a risk factor. Other risk factors included Tetracycline, oral Contraceptives, oral Steroids, PCOS, leisure drug use and hypothyroidism with respective percentages of 12.5%, 6.3%, 6.3% 6.3%, 6.3%, 6.3% and 6.3%. Headache was the most common presenting complaint (100%), followed by decreased vision (40%) and double vision (33.3%). Other symptoms included photophobia (20%), nausea and vomiting (20%), tinnitus (20%), dizziness (6.7%) and pain between the shoulders (6.7%). Visual fields were affected in 86.7% and Ishihara was normal in 86.65%. Visual acuity was maintained at 0.1 Logmar in 66.65%. Opening CSF pressure was found to be 40cmh₂o in 33.3%. 80% of the sample underwent life style changes, 100% received medical management, and 53.3% required Therapeutic LP. 6.7% required surgical treatment which was placement of a shunt. The mean of treatment in months was 24.8 after which 86.7% maintained a visual acuity of 6/7.5 after treatment. There was no significant correlation between CSF opening pressure and visual acuity loss.

Conclusions:

In a century where obesity levels are increasing, it has wide ranging implications for health. IIH is one such condition directly related to obesity in women of child bearing age. Risk factors for visual field loss in this study were obesity, with the high BMI of all the patients involved. The most frequent presentation was headache, decreased vision and double vision. Visual field changes were more commonly observed than visual acuity changes and colour vision was normal in the majority of the study population. All patients were treated medically with the addition of life style changes and therapeutic LP. The mean duration of active treatment was 2 years. There was no relation between CSF opening pressure and visual acuity loss.

A Retrospective Analysis of Orbital Radiotherapy in Thyroid Eye Disease

Lyons C, Billfalk-Kelly A, Khan R.

Royal Victoria Eye and Ear Hospital, Dublin, St Lukes Hospital, Dublin.

Objectives:

To assess the efficacy of orbital radiotherapy in the management of thyroid eye disease.

Methods:

Retrospective analysis of patients with active TED referred for orbital radiotherapy. 25 patients were identified. Primary goals were time to remission and need for orbital decompression due to optic neuropathy.

Results:

22 out of 25 patients were inactive 12 months after orbital radiotherapy. The mean time to inactive TED was 4.75 months (range 1-12) post radiation treatment. 3 patients remained active post orbital radiation. Of these one required steroid sparing agents and one required occasional oral steroids. 4 patients required orbital decompression post radiotherapy. All were carried out for cosmetic appearance as opposed to compressive optic neuropathy.

Conclusions:

This small sample size suggests that orbital radiotherapy might reduce the need for orbital decompression and shortened the duration of activity. This could reduce the overall burden of the disease and total glucocorticoid load.

Genotype-Phenotype Correlations of Patients Given a Diagnosis of Congenital Stationary Night Blindness. (How Stationary is Congenital Stationary Night Blindness?)

Wynne N¹, Carrigan M², Dockery A², Collins K¹, Dempsey H¹, Farrar GJ², Kenna, P^{1,2}.

¹Research Foundation, Royal Victoria Eye and Ear Hospital, Dublin,

²Ocular Genetics Unit, Trinity College Dublin.

Objectives:

We report genotype-phenotype correlations in five families with mutations in GNAT1, SCL24A1 and Rhodopsin (RHO) respectively where the initial diagnosis was one of congenital stationary night blindness (CSNB), or the genes had previously only been described in CSNB.

Methods:

Patients with inherited retinal degenerations attending the Research Foundation at the Royal Victoria Eye and Ear Hospital, Dublin were recruited prospectively and clinically characterized as part of the Target 5000 initiative. Assessment included best-corrected visual acuity, Goldmann perimetry, Lanthony D-15 colour vision testing, slit-lamp biomicroscopy, ISCEV clinical standard electroretinography (ERG), colour and autofluorescence fundus photography, and spectral-domain optical coherence tomography. With informed consent, DNA samples drawn from the subjects underwent exon sequencing of 218 retinopathy-associated genes using target-capture oligo panels.

Results:

Mutations, in 5 unrelated families with congenital night blindness and initially normal day vision, were found in RHO, GNAT1 and SCL24A1. GNAT1 and SCL24A1 gene mutations had previously only been described in patients with CSNB. A homozygous GNAT1 mutation, c.904C>T/p.Gln302*, was identified in a patient with very late onset, 6th decade field constriction and cone ERG amplitude reduction. Two patients homozygous for SCL24A1 c.2679delT/p.Asn893fs had similar clinical features despite initially normal cone ERG responses and fundal appearances. Members of a pedigree heterozygous for RHO c.541G>A/p.Glu181Lys had a classical electronegative ERG, frequently associated with CSNB, however even in the presence of normal fundus findings they had mild evidence of cone dysfunction and established field defects. RHO c.3683A>C/p.Gln184Pro segregated in heterozygotes with entirely normal fundal findings and field analysis up to the 4th decade, however progressive cone dysfunction in later years was evident. RHO c.281C>T/p.Thr94Ile was found in affected members of a kindred who appear to have true CSNB. The phenotype in this pedigree has been non-progressive over a twenty-year interval and patients, even in advanced years, only have compromised night vision.

Conclusions:

CSNB is a group of rare inherited retinal diseases. It is a condition that is classically characterised by congenital nyctalopia caused by rod dysfunction and a non-progressive phenotype. In our series of families with clinical signs and symptoms initially indicative of CSNB, affected members of four families went on to develop progressive rod-cone dystrophies and Retinitis Pigmentosa-like pictures. Caution in diagnosing CSNB or in favourably prognosticating is advisable especially in cases where

Poster Presentations

Long Term Quality of Life and Surgical Outcome after Strabismus Surgery in Patients with Graves' Orbitopathy

Youssef A, Skippen B, Evans S, Lane C, Walters R, Morris D.

Department of Ophthalmology, University Hospital of Wales, Cardiff.

Objectives:

To evaluate the long term surgical success and benefit on quality of life (QoL) of adjustable suture strabismus surgery in Graves' Orbitopathy (GO) patients.

Methods:

Records of all GO patients who had strabismus surgery between 2002 and 2009 were assessed. Nine patients completed the GO-QoL questionnaire on average 8 years after surgery (range 6-12 years). Complete orthoptic examination, including field of binocular single vision (BSV), was performed on five patients on average 9 years after surgery (range 7-12 years). Surgical success was compared between early and late postoperative assessments.

Results:

Between 2002 and 2009, 11 patients with GO were treated with adjustable strabismus surgery. Mean time from strabismus surgery to final questionnaire and/or orthoptic assessment was nine years. Mean long-term GO-QoL score for visual functioning was 98.8 (SD: 2.4) for appearance and was 80.9 (15.8) for visual functioning. Long-term surgical results were 90% excellent, 10% good, 0% fair and 0% poor. There was minimal change in BSV results between early and late assessments. Preoperative factor analysis demonstrated no effect on postoperative surgical outcome.

Conclusions:

In a GO patient cohort, high rates of long-term surgical success were achieved and maintained using an adjustable suture technique. BSV remained stable over a long period. Long-term GO-QoL scores were high on average amongst the GO patients who had strabismus surgery. These GO-QoL scores were higher than other studies of GO strabismus patients with short postoperative follow up.

A Case of Abducens Nerve Palsy in Spontaneous Intracranial Hypotension

Naylor A, Logan P, McAnena L.

Mater Misericordiae University Hospital, Dublin.

Objectives:

The objective is to document the case of a woman who presented to Eye Casualty in MMUH with a postural headache and an abducens nerve palsy as a result of spontaneous intracranial hypotension. The case report details the relevant findings in the patient's history, physical examination, laboratory investigations and radiological imaging and discusses the epidemiology, clinical features, diagnosis and treatment of the condition.

Methods:

A 31 year old Caucasian woman presented to eye casualty with a 10/7 history of a gradual onset postural headache and a 5/7 history binocular diplopia. The fronto-temporal headache was relieved by lying flat and worsened on elevation. The headache was associated with nausea and vomiting. The diplopia was exacerbated by looking to the left. The patient's past medical history, social history and family history were non-contributory. Physical examination revealed an isolated partial left sided abducens nerve palsy. Laboratory investigations including tests for infectious and immunologic causes were normal. MRI brain and whole spine demonstrated diffuse pachymeningeal thickening, a mildly prominent pituitary and extrathecal collections in mid-thoracic and lower lumbar spine respectively. The patient was managed conservatively with bed rest and hydration. At discharge the patient's headache had resolved and diplopia had markedly improved.

Results:

Spontaneous intracranial hypotension is a rare condition resulting from a reduced volume of CSF. Intracranial hypotension most commonly occurs following lumbar puncture but may be due to spontaneous leakage from the spinal cord especially in those with underlying connective tissue disease or precipitating trauma¹. Estimated annual incidence is 2-5/100,000, with a peak in women aged 40-60¹. It is characterised by a gradual onset postural headache and may be accompanied by neck pain/stiffness, nausea, vomiting, tinnitus and less commonly variety of ophthalmologic manifestations including decreased visual acuity, visual field defects and cranial nerve palsies². Diplopia occurs in roughly 30% of patients². The abducens nerve is the most susceptible to traction related injury from SIH due to its long intracranial course². 80% of ophthalmoplegia in SIH is due to abducens nerve paresis². The emergence of MRI has improved the diagnosis of SIH, however determining the site of the CSF leak may be difficult¹. SIH is a benign, self-limiting condition and most patients recover with conservative management alone. When this fails the next treatment option is autologous epidural blood patch administration¹.

Conclusions:

SIH is a rare cause of abducens nerve palsy but is being more commonly diagnosed due to increasing awareness of the condition and improvements in radiological imaging.

References: 1: Scott S, Davenport R. Low Pressure Headaches Caused by Spontaneous Intracranial Hypotension. *BMJ* 2014; 349:g6219. 2: Zada G, Solomon TC, Giannotta SL. A Review of Ocular Manifestations in Intracranial Hypotension. *Neurosurg Focus* 2007; 23(5): E8.

The Role of the $\alpha v\beta 3$ Integrin in Lamina Cribrosa Cells and the Possible Role in Glaucoma Pathogenesis

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¹Clinical Research Centre, Catherine McAuley Centre, UCD.

²Anatomy Dept, UCD.

³Dept. of Pharmacology & Neuroscience and the North Texas Eye Research Institute, University of North Texas.

Objectives:

Glaucoma is a chronic and progressive neuropathy characterised by the loss of retinal ganglion cell (RGC) axons and structural changes in the optic nerve head (ONH) leading to a progressive and irreversible loss of vision. Stiffness is the ability of a material to resist deformation, ECM changes occur with stiffness increasing with age. In glaucoma fibrotic changes occur in both the ONH and trabecular meshwork (TM) these changes are associated with cellular and molecular events which drive progressive tissue fibrosis and stiffening. The $\alpha v\beta 3$ Integrin is expressed in the ONH. Connecting the extracellular matrix (ECM) to the cytoskeleton, integrins allow for bidirectional signal transduction. We propose that $\alpha v\beta 3$ is activated by and transmits mechanical signals from the ECM of the lamina cribrosa (LC) and is central to the pathogenesis of glaucoma. We have previously shown that production of profibrotic ECM genes is raised when cultured on a stiff substrate (100 kPa) compared to a soft substrate (4kPa). Elevated stiffness drives ECM production.

Methods:

Human LC cells were cultured in substrates of varying stiffness, approximating physiological (4kpa) or glaucomatous (100kPa) for 96 hours. Following this exposure, $\alpha v\beta 3$ integrin gene transcription were assessed with quantitative RT-PCR. α -SMA (smooth muscle actin), a profibrotic ECM gene, normally upregulated in glaucoma, expression was assessed using an immunofluorescence technique.

Results:

The presence of $\alpha v\beta 3$ genes were confirmed by quantitative RT-PCR. Cells grown on the stiff substrate proliferate faster and were more firmly adhered to the substrate than those cultured on the softer substrate. We have previously shown that in normal LC cells α -SMA staining is more pronounced in cells grown on the stiff substrate.

Conclusions:

The $\alpha v\beta 3$ integrin's role in mechanotransduction is proven in other cell lines, thus $\alpha v\beta 3$ represents an exciting potential treatment target to break the cycle of stiffness causing excessive profibrotic ECM production. This integrin could represent a more specific target than others previously investigated including TGF β 1 and TGF β 2. The increase in expression of α -SMA signal and the observed change in cellular morphology demonstrates the effect of increased stiffness.

A Case Series of Swept Source OCTs: Optic Nerve Head Drusen vs Papilloedema

Salih A, Cosgrave E.

University Hospital Waterford, Waterford.

Objectives:

To describe swept source OCT findings in Optic nerve head drusen and Papilloedema

To describe additional clinical methods used to differentiate between papilloedema and pseudopapilloedema with reference to optic nerve head drusen.

Methods:

OCT images of patients with optic nerve head drusen and papilloedema attending a consultant clinic EC were obtained. Using recently described swept source OCT parameters described in the literature we describe the features used to distinguish between the two entities. Subretinal hyporeflective space as well as the retinal nerve fiber layer thickness of superior, inferior, nasal and temporal areas were used to assess each entity. Clinical appearance of the disc was documented. Established methods such as B-scan ultrasound and fundus auto fluorescence are also discussed.

Results:

Using the images obtained from the OCT, certain findings such as increased subretinal hyporeflective spaces with a lazy V pattern and a smooth internal contour for the disc elevation was a consistent finding when describing Optic disc oedema. Increased retinal nerve fiber layer was found in new onset papilloedema (chronicity leads to atrophy). Optic disc drusen showed a less smooth internal contour with irregularity described as "lump bumpy" with a rapid decline in the subretinal hyporeflective spaces. Retinal nerve fiber layer is usually normally or slightly increased.

Conclusions:

Assessment of optic nerve disease involves examining visual acuity, colour vision, pupil reaction, visual fields and optic nerve appearance. Although these give only a general guidance in evaluating optic nerve heads in order to differentiate papilloedema or disc oedema and drusen, it can be seen that swept source OCTs help in a quantitative and qualitative manner. Ganglion cell loss can precede changes in the retinal nerve fibre layer. Measurement of subretinal hyporeflective spaces and retinal nerve fiber layer thickness are important indices for differentiating optic nerve head drusen and optic disc oedema. Swept source OCT can provide both, diagnostic and sequential quantitative information in the management of optic neuropathy.

Review of the Vitreoretinal Service at University Hospital Waterford

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University Hospital Waterford, Waterford.

Objectives:

To determine the catchment area for the vitreoretinal service. To describe the frequency of surgeries that were undertaken from January 2015 to January 2018. To analyze the outcome of tractional RD and delamination surgeries and to compare them to international studies.

Methods:

The total amount of vitreoretinal surgeries were obtained from Mr. Doris' records from January 2015 to January 2018. Full coverage of patients was used in the statistical analysis using SPSS and Microsoft Excel. Catchment heat maps were constructed from the data as well for RD, ERM/MH/VMT and diabetic surgeries. Visual acuities pre and post operatively were obtained for all patients who underwent diabetic related tractional RD and diabetic delamination surgeries. These were then compared to international study figures.

Results:

Heat Maps were done: It was found that the majority of patients were within the South-East catchment of University Hospital Waterford. Emergency RD surgeries had a wider distribution than the other surgeries. The average driving times for Primary RD repair, Secondary RD repair, Vitrectomy ERM/MH/VMT and Diabetic related vitrectomies were 53.7, 51.1, 62.3 and 50.7 minutes respectively. Primary RD repair, Vitrectomy for ERM/MH/VMT and Diabetic related vitrectomies were the most common procedures carried out at the vitreoretinal service at University Hospital Waterford. Diabetic patients who underwent tractional RD and delamination surgeries (53% of total vitreoretinal surgeries) showed a gain of 0.3 logmar or more in 72%.

Conclusions:

Vitreoretinal service in University Hospital Waterford is covering a wide area and a wide range of vitreoretinal surgery requirements. Periodic evaluation provides guidance on where resources need to be distributed. Moreover, it provides an idea of disease trends as well as offering an insight on effects that community interventions, such as Diabetic Retinal Screening, have on the need of surgeries for diabetic complications. Results obtained on visual acuity gain after diabetic tractional RD and delamination surgeries were found to be comparable to Yorston et al who had a 75% gain. Gupta et al had an 0.3 logmar gain or more in 60% which was similar to RCOphth figures. Visual acuity losses of 0.3 logmar or more was found in 6% whilst RCOphth and Yorston et al showed 18% and 9% respectively.

Optical Coherence Tomography Derived Measurements of Retinal Nerve Fibre Layer Thickness in Optic Neuritis vs Non-Optic Neuritis Eyes

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Objectives:

This study aimed to determine whether Optical Coherence Tomography (OCT) derived measurements of retinal nerve thickness differed with respect to history of optic neuritis (ON) and disease duration in a selection of Multiple Sclerosis (MS) patients.

Methods:

A prospective cohort study of 30 MS patients currently undergoing treatment with natalizumab was undertaken. OCT imaging of the peripapillary retinal nerve fibre layer (pRNFL) was performed (60 eyes). A chart review and questionnaire provided details of ON, disease and treatment history. An analysis was performed to determine the significance of retinal thinning in all quadrants of the pRNFL with respect to the above parameters.

Results:

Optic neuritis (ON) eyes exhibited significant thinning in the temporal quadrant of the pRNFL ($p=0.018$) when compared to non-ON eyes. MS non-ON eyes with a disease duration greater than five years had thinner pRNFL measurements than the 0-5 year group. When compared to healthy population data, ON eyes were more likely to exhibit moderate/severe thinning than non-ON eyes.

Conclusions:

Optic Neuritis is associated with a loss of average pRNFL thickness compared to non-ON eyes, best predicted in the temporal quadrant. RNFL thickness is decreased in parallel with disease duration. There may be a role for OCT in following MS patients in the neurology clinic.

Comparison of Results from National Diabetic Retinal Screening Programme with Slit Lamp Examination in Patients Referred to Tertiary Centre, Galway University Hospital (GUH)

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Objectives:

The National Diabetic Retinal Screening Programme, Diabetic RetinaScreen is a government-funded screening programme in Ireland that offers free, annual diabetic retinopathy screening to people with diabetes aged 12 years and older. Both Type 1 and Type 2 diabetics are at risk of developing diabetic retinopathy and maculopathy. This is a common complication of diabetes which affects the retina arteries and can lead to deterioration in vision. It is one of the leading causes of blindness for people aged 20 to 64 years. Diabetic RetinaScreen uses specialised digital funduscopy to look for these changes. The aim of this study is to determine the accuracy of grading when screening for retinopathy and maculopathy in diabetics when compared with slit lamp examination in outpatient clinic.

Methods:

Patients screened positive with the Diabetic RetinaScreen programme were referred to tertiary referral centre (GUH) for an outpatient ophthalmology clinic appointment. Those who attended from 07 January 2017 to 07 November 2017 in GUH were included in this retrospective cohort study. The results of screening and clinic visit from OptoMize diabetic retinopathy screening software were determined and compared. The data was anonymised, collected and analysed on an encrypted excel sheet.

Results:

391 patients were identified, 9 did not attend the clinic visit. Of the 382 patients who attended, the mean age was 63.0 ± 15.5 years, range 20-95 years. All patients were examined with slit lamp and had an OCT scan. The grading of 762 eyes was analysed, 2 eyes were excluded because of no perception to light. At screening, there were 409 (53.7%) eyes graded M1 and at first clinic visit 243 (31.9%) eyes graded M1. 496 (65.1%) eyes had accurate maculopathy grading diagnosis at screening visit. True positive = 194 (25.5%) False positive= 215 (28.3%) True negative= 302 (39.7%) False negative= 49 (6.4%) For retinopathy grading, it was accurate in 554 (72.7%) eyes. 69 (9.1%) eyes diagnosed with retinopathy at screening were normal (R0). There was a high false positive of diagnosis of background retinopathy (R1), 62 (8.1%) eyes were normal (R0). There was a high false negative of background retinopathy (R1), 50(6.6%) eyes had preproliferative retinopathy (R2). There was overdiagnosis of active proliferation (R3A), 8 (1.0%) eyes had stable proliferation (R3S), 9 (1.2%) eyes had background retinopathy(R1) and 3 eyes had preproliferative changes (R2). We observed that 1 eye graded normal (R0) had active proliferation (R3A). 4 eyes graded with active proliferation (R3A) and 2 eyes graded with stable proliferation (R3S) were normal (R0). 1 eye with CF was graded stable proliferation (R3S). 1 eye with HM was graded active proliferation (R3A).

Conclusions:

The accuracy of the diabetic screening programme was 65.1% in grading maculopathy and 72.7% in grading retinopathy when compared with slit lamp examination in outpatient clinic. At first clinic visit, 243 (31.9%) eyes had maculopathy, 517 (67.8%) eyes had background retinopathy, 95 (12.5%) eyes had preproliferative retinopathy, 26 (3.4%) eyes had stable retinopathy and 13 (1.7%) eyes had active retinopathy. A suggestion is a second-line screening tool such as OCT could significantly reduce the number of false positives and improve accuracy.

Lamina Cribrosa Cell Bioenergetics in Glaucoma: Role of Glycolysis and Glutaminolysis

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Objectives:

In glaucoma, the lamina cribrosa (LC) region undergoes considerable 3D structural changes relating to significant alterations in the extracellular matrix and associated cupping. Cells mediating this cupping include astrocytes and LC cells. We have previously shown mitochondrial dysfunction and an increased rate of proliferation in glaucomatous LC cells (GLC). Rapidly proliferating cells utilise alternative metabolic pathways to meet energy requirements. Monocarboxylate transporter 1 (MCT1) and glutaminase 2 (GLS2) are known to play an essential role in cancer cell metabolism. Glycolysis (the Warburg effect) results in high lactate levels, increasing the expression of MCT1. Glutamine uptake and metabolism is a key part of biomass accumulation in rapidly proliferating cells. The purpose of our research was to investigate the expression of markers (MCT1 and GLS2) associated with an enhanced glycolysis and glutaminolysis phenotype.

Methods:

Human primary LC cells derived from normal and glaucomatous age-matched donors were cultured between passages 4-8. At confluence, cells were subject to either RNA extraction or protein isolation. MCT1 and GLS2 expression levels were quantified using quantitative real time (qRT-PCR) and western immunoblotting.

Results:

The results showed that the PCR transcription level of both MCT1 and GLS2 was significantly elevated in GLC (39.14 ± 3.17 fold change in gene expression) versus normal LC cells (NLC) (31.34 ± 2.91), ($n = 3$, $P < 0.05$) for MCT1 and (35.69 ± 3.15) versus NLC (17.63 ± 2.16) ($n = 3$, $P < 0.02$) for GLS2. This was confirmed at the protein expression level, as western immunoblotting analysis showed that the expression of both MCT1 and GLS2 was significantly elevated in GLC (9.41 ± 1.29 a.u.) versus NLC (6.04 ± 1.23 a.u.), ($n = 3$, $P < 0.05$) for MCT1 and (8.67 ± 1.23 a.u.) versus NLC (4.95 ± 0.98 a.u.) ($n = 3$, $P < 0.05$) for GLS2.

Conclusions:

We found elevated expression of MCT1 and GLS2 both at transcript and protein levels, indicating enhanced glycolysis and glutaminolysis in glaucomatous LC cells. This is new evidence that glaucomatous LC cells utilise alternative metabolic pathways.

Blocking these pathological pathways or facilitating physiological pathways (i.e. oxidative phosphorylation) could be a potential therapeutic in glaucoma.

Investigating the Lamina Cribrosa: Development of a Novel Biomimetic Model of the Lamina Cribrosa Region for Glaucoma Research

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Objectives:

The lamina cribrosa (LC) region of the optic nerve head (ONH) is a specialized fenestrated connective tissue structure consisting of pores and beams arranged as an intricate 3D meshwork. The pro-fibrotic remodeling of the LC connective tissue in response to increasing intraocular pressure, means that it is an important site of glaucomatous damage. This remodeling, governed by resident LC cells, coincides with a loss of compliance (stiffening) within the ONH. Traditionally, LC cells have been grown in 2D using flat plastic cell culture dishes which are several magnitudes stiffer than the in-vivo LC environment. Use of such 2D models does not consider the complex interplay that occurs between the LC cells and their surrounding 3D tissue microenvironment. The aim of this study was to create a novel, 3D in-vitro model of the stiffened glaucomatous LC region using bioengineered scaffolds.

Methods:

A freeze-drying method was used to fabricate collagen/glycosaminoglycan scaffolds (8mm width, porosity 40-50 μ m). Dehydrothermal and 1-ethyl-3-(3-dimethyl aminopropyl) carbodiimide crosslinking was utilized to produce soft (0.5kPa, 1kPa) and stiff (1.5kPa) unit scaffold compliance reference values. Scaffolds were seeded with primary human LC cells at 3500cells/mm² using a dual-seeding method on both top and bottom scaffold surfaces. Cell-seeded scaffolds were subsequently harvested 2 days post-culture and evaluated histologically.

Results:

The 0.5kPa scaffold proved non-viable, as it experienced extensive shrinkage and loss of mechanical integrity. Microporous 3-D structure was maintained, however, in both the soft (1kPa) and stiff (1.5kPa) scaffolds. Histological evaluation showed that the primary human LC cells successfully integrated into both tested scaffold-types.

Conclusions:

Three-dimensional biomimetic scaffolds were produced to represent both normal 'soft' and 'stiff' glaucomatous LC regions and were subsequently successfully seeded with primary LC cells. The tissue engineered 3-D model more closely represents the in-vivo LC environment, when compared to traditional 2-D systems. This will allow future in-depth examination of the underlying fibrotic responses of the LC cells under glaucomatous conditions.

An Audit of the Geographic Locations of Patient Visits to the Orthoptic Department – University Hospital Galway

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Objectives: Establish the geographic location of patient visits attending appointments outside county Galway and furthermore out-with the SAOLTA hospital group. Furthermore, a main objective was to establish the implications this may have on workload and how geographically this compares to a key national reform theme “Delivering care closer to home”.

Methods: A service audit was carried out using information from daily clinic lists to establish the county each patient lives in. This was then added into a Microsoft Xcel document at the end of each day by a single user in order to reduce inter rate reliability. The audit was carried out over a 1 year period from March 17 to February 18.

Results: A total of 2005 patient visits were included. From the total number of visits, 29% were patients from outside the county of Galway, 3% were from counties out with the jurisdiction of the SAOLTA healthcare group, less than 1% outside of Rep of Ireland. The results also revealed that some patients had travelled as far as approximately 250km for outpatients' appointments at UHG.

Conclusions: The audit shows that the UHG orthoptic department is dealing with a high percentage of patients from beyond county Galway. Efforts should be made to refer patients back to their own jurisdiction wherever possible to limit the impact on patient workload. The implementation of clear referral pathways to tertiary care centers as indicated in the national clinical programme for ophthalmology may help to reduce the number of referrals being received to UHG unnecessarily.

Ocular Manifestations of Sexually Transmitted Diseases in the Emergency Department

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Objectives: Sexually Transmitted Diseases (STDs) have a vast array of ocular presentations. This depends both on etiology as well as the length of active infection. These cases demonstrate the various clinical appearances and diagnostic challenges that can occur with ocular Human Immunodeficiency Virus (HIV) and Syphilis.

Description/Case Report: A 27-year-old Caucasian female presented to the Eye Casualty with a 2 week history of left eye pain associated with headache and nausea. She had mild corneal oedema and +4 cells in the left anterior chamber. Fundal examination of the left eye revealed optic disc swelling, retinitis and +4 vitreous cells. A uveitis screen was performed. She was commenced on tapering topical and oral steroids. Treponema Pallidum serology subsequently came back strongly positive and she was referred to the GUM clinic and commenced on intramuscular penicillin.

A 50-year-old male of African origin presented to the Eye Casualty with a history of sudden onset loss of vision in the left eye upon waking. Fundal examination of the right eye revealed areas of peri-vascular sheathing as well as retinal neovascularization and a central retinal vein occlusion with diffuse flame-shaped haemorrhages and cotton wool spots in the left. He is HIV positive. Biochemical investigations were conducted including a vasculitis screen. He underwent left cyclodiode laser and intravitreal anti-VEGF and right panretinal photocoagulation. He was referred back to the infectious disease team for optimization of his medication.

A 76-year-old Caucasian male presented to the Eye Casualty with a history of sudden onset decreased left visual acuity upon waking. He was diagnosed and treated as anterior uveitis.

On review, his left visual acuity dropped to hand movements and his eye was tender. Anterior chamber examination revealed +4 cells and posterior segment examination revealed a dense vitritis with no fundal view. This was associated with bilateral hearing loss and balance problems. A uveitis screen was performed. His Treponema Pallidum serology subsequently came back strongly positive. He was commenced on IV benzylpenicillin and referred to the Infectious Disease team.

Conclusions: Ophthalmologists in everyday practice encounter the problem of ocular involvement of STDs. This can lead to diagnostic difficulty. A high index of suspicion should be borne in mind and these patients referred to a specialist in a timely manner.

Transient Receptor Potential Channels TRPC1 and TRPC6 Regulate Lamina Cribrosa Cell Extracellular Matrix Gene Transcription and Proliferation

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Objectives:

The lamina cribrosa (LC) region of the optic nerve head (ONH) in glaucoma is associated with increased synthesis of extracellular matrix (ECM) proteins and connected tissue fibrosis. Oxidative stress is a significant mechanism associated with the pathogenesis of glaucoma. We have previously shown that intracellular calcium ($[Ca^{2+}]_i$) and profibrotic ECM gene production are raised above physiological levels in glaucoma LC cells. Elevated $[Ca^{2+}]_i$ drives ECM production, cell proliferation and contractility via a mechanism involving the calcineurin-NFAT (nuclear factor of activated T-cells) signaling pathway and through the up-regulation of Ca^{2+} ion channels such as transient receptor potential canonical (TRPC) channels. In the present study, we explored the possible implications of TRPC channels in oxidative stress induced pro-fibrotic ECM gene expression and LC cell proliferation.

Methods:

Human LC cells were cultured under physiological conditions or subjected to oxidative stress (H_2O_2 , 100 μM), for 6 hours with or without SKF96365 (10 μM) (a pan TRPC inhibitor) or siRNA knockdown of TRPC1 and TRPC6. Following treatment, ECM gene transcription, LC cell proliferation and NFATc3 phosphorylation, were assessed by real time qRT-PCR, cell counting methyl thiazolyl tetrazolium salt (MTS) assay and Western blots analyses, respectively.

Results:

TRPC1/6 transcript and protein expression levels are significantly elevated in glaucoma LC cells. SKF96365 and siRNA-TRPC1/6 treatment significantly reduced the H_2O_2 -induced ECM gene production (transforming growth factor- $\beta 1$ (TGF $\beta 1$) (From 36.2 ± 8 to 25.2 ± 2 fold change) and collagen type 1A1 (Col1A1) (from 37.2 ± 7 to 25.3), and LC cell proliferation (from $137.7\% \pm 11.7$ to 79.4 ± 5.1 %) in normal and (from 119.3 ± 9.9 % to 58.26 ± 6.4 %) in glaucoma LC cells. The effect of SKF96365 on TRPC channels occurred through of the NFATc3 signalling pathway, as its pre-treatment blocked the H_2O_2 -induced NFATc3 protein dephosphorylation.

Conclusions:

The expression of TRPC-1 and -6 is elevated in glaucoma LC cells and contribute to the H_2O_2 -induced profibrotic ECM gene transcription and LC cells proliferation through a mechanism involving the Ca^{2+} -NFATc3 signaling pathway. TRPC1/6 channels might constitute important therapeutic targets for preventing ECM remodelling and fibrosis progression in glaucoma.

Correlation Between Clinical Profiles and Histopathological Findings of Temporal Artery Biopsy

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Objectives:

This audit sought to correlate the clinical features of patients suspected of having giant cell arteritis with actual histopathological finding from temporal artery biopsies. The goal was to determine the feasibility of temporal artery biopsy in those who were suspected to have giant cell arteritis.

Methods:

Retrospective study of 16 patients who underwent temporal artery biopsy by one ophthalmology team from 2015 to 2017 at a single institution. Medical charts were reviewed, clinical symptoms were collected according to British Society of Rheumatology (BSR) and British Health Professionals in Rheumatology (BSPR). Biochemical results, histopathology findings and treatments were recorded.

Results:

16 temporal artery biopsies were performed (mean age: 74 years old, male: female= 9:7). One third of the temporal artery biopsies came out positive and two third were negative. Histologically positive patients had higher mean age of 78 years old versus 72 years old, high ESR (ESR> 50mm/hr) 50% versus 20%, and met the criteria of BSR& BHPR 100% versus 50% than those with negative finding. Only one out of 10 negative temporal artery biopsies was non-arterial.

Conclusions:

Despite high percentage of negative temporal artery biopsies, the result of histopathological finding does correspond to clinical features of patients with giant cell arteritis by 69%. Nevertheless, those 31% presenting with clinical symptoms yet negative biopsies were clinically diagnosed and managed as giant cell arteritis.

Is It a Flat Nevus Or a Melanoma!

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Objectives:

To report the importance of the follow up of the flat pigmented lesions, and to outline the different type of eyelid tumors, pathological and clinical features and management.

Methods:

A case report of a 61 years old man with a rapid increase in size and change in characteristic of a lower eyelid pigmented lesion. Patient's presenting history, Histologic type of the melanoma, tumor growth phase, tumor thickness, and other microscopic features were evaluated.

Results:

A serious change of a flat pigmented left lower eyelid lesion over a 2 years period, with loss of follow up, resulted in a stage 4 systematic metastasis of a Nodular melanoma. The lesion is 2.8 mm Breslow thickness, level V Clark level, with vertical growth phase.

Patient evaluated by the oncology team reported to have metastatic melanoma including C2, bony mets T8, T11 and in his pelvis. No neurosurgical intervention is planned, awaiting his tumour RAF mutation status to organize the appropriate therapy accordingly.

Conclusions:

In conclusion we present a case of a Nodular eyelid melanoma with stage 4 systemic metastasis .

Geographic Distribution of Ophthalmic Surgical Procedures Carried Out at University Hospital Waterford (UHW) Over a 12-Month Period

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Objectives: To determine the area of residence of patients undergoing ophthalmic surgery procedures at University Hospital Waterford (UHW). Inclusion criteria: Patient who underwent ophthalmic surgical procedures both emergency and elective over a one-year period. Exclusion criteria: Patients who underwent intravitreal injections.

Methods: A retrospective service provisions audit; One-year review of surgical procedures carried out at University Hospital Waterford from 01/11/2016 to 31/10/2017; Data gathered by HIPE coding – surgical procedure and area of residence.

Results: The catchment area for services at UHW includes the counties of Waterford, Wexford, Carlow / Kilkenny and South Tipperary Patients with an area of residence outside of these counties accounted for 18.23% of ophthalmic surgery carried out. Likely the true catchment population is underestimated.

Conclusions: Recommendations: clear cut pathway of referral from primary care is needed in terms of tertiary referral unit for geographic area - Plans to align Hospital Groups and CHO would make this more transparent. Review of UHW catchment area populations figures for Ophthalmology referrals with consideration to extend to other specialties.

The Wait for Cataract Surgery: Low Cost Interventions to Enhance Service Delivery in Elective Cataract Surgery

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Objectives: The current demand for elective cataract surgery is high and forecasted to continue increasing as a consequence of an aging population. Efficiency of the current service delivery systems, which often operate with a fixed capacity, is therefore of great importance. We examined two new methods for increased efficiency by targeting a reduction in patient non-attendance for surgery.

Methods: A 3-month prospective preliminary audit established high rates of patient non-attendance for cataract surgery. Of 635 scheduled cases, 122 cancelled within 1 week, and 29 cancelled on day of surgery. A second prospective audit was carried out over a 6-month period. The intervention included a team member contacting all patients within 1-week pre-op and maintaining a list of patients available at short notice. Patient experience of the pre-surgery telephone call was examined through an anonymous patient questionnaire on the morning of surgery.

Results: All patients with the exception of 1 were contactable through contact telephone number or next of kin contact details (1 patient RIP between listing and surgery). During the 6-month study period, there was only a single episode of patient non-attendance, due to an acute same day illness, despite having confirmed attendance 2 days prior. All other cases with potential for non-attendance were identified during the pre surgery call, removed or rescheduled and subsequently replaced. Likeart survey responses demonstrated all patients "strongly agreeing" with the following questions; 'I had the chance to ask any questions', 'I found it relieved anxiety to have contact with the team before coming in for surgery', 'Overall I found the nature of the call friendly', 'I would recommend continuing this practice for other patients'. No patients found the call disruptive or unnecessary.

Conclusions: This audit demonstrates the ability to increase service efficiency through two methods; firstly ensuring all patients are contacted within 1 week of surgery to confirm attendance and identify any issues in advance, and secondly, employing a regularly updated list of patients listed for second eye surgery, living in close proximity and available at short notice, who may replace late cancellations. The introduction of these methods was well received by patients and is continuing in our service.

A Comparison of the Workload of Focal Macular Laser and Pan-Retinal Photocoagulation Pre- and Post- the Establishment of National Diabetic Retinal Screening Programme in Cork University Hospital

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Objectives:

To investigate the workload of focal macular laser and PrP performed by consultants and non-consultant hospital doctors (NCHDs) in General Clinic and DRS Clinic pre and post the establishment of NDRS Programme in CUH.

Methods:

Data regarding diabetic laser procedures carried out in CUH between December 2010 and November 2016 was collected from logbooks and electronic records. The data includes patient age, operators, procedure type, and referral routes.

Results:

1360 diabetic laser procedures have been performed within six-year period of study. There is a statistically significant difference between mean patient age and NDRS establishment ($t(1355) = 3.209, p < 0.001$). The number of laser procedure performed by NCHDs in the General Eye Clinic was increased by 0.89%. There is a statistically significant association between operators and NDRS establishment ($X^2(1) = 138.42, p < 0.001, \phi_c = 0.32$). The workload in DRS Clinic was predominantly consultant-led PrP ($n = 318$). There is a significant association between type of procedure and NDRS establishment ($X^2(1) = 8.05, p = 0.05, \phi_c = 0.077$).

Conclusions:

There is greater increase in the number of pan-retinal photocoagulation (PrP) treatment than focal macular laser, predominantly consultant-led PrP treatment in the DRS clinic. With a significant increase in the laser workload in DRS clinic, it might affect junior eye doctors' training in the future, considering the time lag effect in diabetic eye screening programme.

Impact of a National Diabetic Retinopathy Programme on Vitrectomy Rates for Diabetic Eye Disease in a Regional Treatment Centre

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Objectives:

To examine the impact of the 'Diabetic RetinaScreen' (DRS) programme on vitrectomy rates for the management of diabetic eye disease in Cork University Hospital's (CUH) regional treatment center.

Methods:

This was a retrospective chart-based review. All diabetes-related vitrectomies for three years before and after the commencement of the DRS in 2013 were identified using Surgical and Hospital In-Patient Enquiry logbooks ($n = 215$). Of these, 105 met the inclusion criteria. Data were extracted and analyzed using Excel and SPSS Statistics.

Results:

There were 36 diabetes-related vitrectomies performed during the three years prior to the DRS programme, increasing by a factor of 1.9 to 69 vitrectomies over the three years following its roll out. While only 23% of vitrectomies post establishment of DRS were for referrals from this service, this rate increased over the three years: 13% in 2014, 16% in 2015 and 43% in 2016. Mean logMAR visual acuity (VA) pre-vitrectomy was $1.398 (\pm 0.729)$ and post-vitrectomy was $0.682 (\pm 0.708)$, $p < 0.001$.

Conclusions:

Vitrectomy rates were higher in the three years following the commencement of the DRS programme, the majority of which were for patients who had yet to engage with this service. Thus it may be a number of years before increased screening uptake with DRS results in a reduction in vitrectomy rates.

An Audit of Referrals to the Medical Retina Service at SVUH

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Objectives:

To evaluate the demographics of patients referred for Medical Retina (MR) services to the Ophthalmology Department at SVUH; To evaluate the average waiting time of patients referred to the department for MR services (i.e. outpatient review and intravitreal injection).

Methods:

Thirty (30) medical case-notes were reviewed retrospectively to identify: 1 Demographics of patients, including age, gender, and diagnosis; 2 Average time from referral to the first out-patient clinic appointment; 3 Average time from clinic appointment to the first injection of the intra-vitreous treatment course.

Results:

The average patient age was 77 years. 67% of patients were female (20/30). The majority of patients had the diagnosis of wet age-related macular degeneration (AMD) (70%); other diagnoses include diabetic macular oedema (5/30) and retinal vein occlusion (5/30). The average outpatient appointment waiting time was 7 weeks from referral; with the average time from 1st clinic appointment to the first injection being 3.5 weeks.

Conclusions:

Our medical retina service appears to be offering a reasonable waiting time for 1st appointments and 1st intravitreal injections. As the number of new referrals is increasing over time, this current data is useful in planning the future needs for MR services at SVUH to meet the increasing demand of our ageing population.

Misinterpretation of Toric Biometry Leading to Incorrect Intraocular Lens Implantation

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Objectives:

In preparing for toric lens implantation, careful planning is required. This case highlights the importance of familiarity with different formats of biometry.

Methods:

The case of a 54-year-old woman who attended Mater Misericordiae University Hospital on 30th March 2017 for right cataract surgery was reviewed.

Results:

The patient had an incorrect toric intraocular lens implanted, resulting in 1.405 dioptres of myopic error. The error was found to be due to mis-reading of the biometry print-out of the IOL Master 700, which had been recently introduced to the department. This print-out displays power of lenses according to spherical equivalent, not sphere, as the choosing surgeon had assumed. This form of biometry requires that the surgeon calculates the required sphere from the presented spherical equivalent.

Conclusions:

Particular attention should be given to the form of biometry data presented to the surgeon. For verification purposes the zcalc, available online, is a useful tool.

Impact of the National Diabetic Retinopathy Screening Service (NDRS) on the Workload of the General Eye Clinic in a Regional Treatment Centre

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Objectives:

To examine the impact on the workload of the general eye clinic in Cork University Hospital (CUH) following the roll-out of the NDRS, and the adherence to the principal of diabetic retinopathy (DR) screening to be performed with the NDRS in the community or the dedicated regional diabetic retinopathy treatment (DRT) centre.

Methods:

Analysis of a prospectively created database detailing the outcomes of all patients of the CUH DRT clinic between December 2013 and October 2016 was performed. The potential impact on the workload of the general eye clinic was determined by identifying all those requiring onward referral for non-diabetic eye disease (NDED). The number of patients still attending the general eye clinic in CUH primarily for DR screening was estimated by prospectively analysing the charts of all patients attending over a week-long period in June 2017. These results were then compared to a 2011 study, which had predicted a decrease in the general eye clinics' DR-related workload following roll-out of the NDRS.

Results:

Of the first 2,081 patients attending the DRT clinic, 154 (7.4%) were referred to the general eye clinic as a new patient for NDED. Of the 291 patients attending the general eye clinic over a week-long period, 40 (13.7%) were diabetic patients, of whom 16 (40%) were suitable for discharge to the community under the discharge criteria. Only five patients (12.5%) were actually discharged. Compared to a 2011 audit where 19.9% of general outpatient attendances were for DR screening, there has been a 32.2% reduction in general outpatient workload related to diabetic eye care. It is estimated that this has freed up over 900 outpatient slots annually, but falls short of that audit's predicted figure of 2,200.

Conclusions:

The NDRS has resulted in a net reduction in outpatient workload for the general eye clinic in CUH, with the numbers of new referrals for non-diabetic eye disease being exceeded by the amount of patients discharged for diabetic retinal screening. Further education of and adherence to NDRS guidelines may be required in order to ensure its implementation is fully effective.

A Novel Surgical Method for the Treatment of Mild to Moderate Involutional Lower Lid Ectropion with Medial Involvement

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Purpose:

Case series of 42 eyes of 27 patients who underwent lateral canthal tightening and medial retractor plication using a novel surgical method to address mild to moderate involutional lower lid ectropion.

Methods:

A 1-2mm shallow incision is created in the grey line laterally in the upper and lower lid at the lateral canthus extending approximately 6mm medially. A separate deep incision to the periosteum of approximately 10mm is made perpendicular to the orbital rim at an angle of approximately 45 degrees to the horizontal orbital plane in line with the lower lid. A 6.0 double-ended prolene suture is passed through both medial ends of the grey line incision. This is passed through the periosteum via the orbital rim incision, tied and buried deep to the orbicularis muscle. The skin is closed with interrupted prolene sutures. A medial retractor plication is performed by way of incising the tarsal conjunctiva inferior to the tarsal plate, exposing the inferior retractors and suturing them to the tarsal plate with buried interrupted 6.0 vicryl sutures.

Results:

Forty-two eyes of 27 patients underwent lateral canthal tightening with concurrent medial retractor plication. Nineteen patients were male. The mean age was 76 years (range 60-86). The mean length of follow-up was 5.4 years (range 1-8). Only one patient required surgery for recurrent lower lid ectropion. It was felt this patient was a poor candidate for the surgery in retrospect as his ectropion carried a cicatricial element. He underwent lower lid wedge resection and skin graft and maintains good lid apposition 14 months after surgical repair.

Conclusion:

Lateral canthal tightening with lower lid retractor plication has a low recurrence rate and is a useful option for the treatment of mild to moderate involutional lower lid ectropion with medial involvement.

Hydroxychloroquine Screening Practices in Irish Ophthalmology Clinics

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Objectives:

To determine which clinics are performing hydroxychloroquine screening; To determine when baseline and review hydroxychloroquine screens are being performed; To determine the screening examinations and investigations that clinicians find most useful; To determine the frequency of discontinuation of hydroxychloroquine in Irish ophthalmology clinics

Methods:

A 15 question survey was electronically distributed via the Irish College of Ophthalmologists to current registered ophthalmologists. Respondents answered this survey online and the results were forwarded to a secure online account where they were analysed.

Results:

Twenty-four replies to the online survey were received. On average, ophthalmologists reviewed 6.75 patients on hydroxychloroquine in their clinics annually. This ranged from 0.5- 16 patients yearly. Sixty-five percent of respondents worked in a clinic in a general hospital. Eight-five percent of respondents reported baseline ophthalmology examination of hydroxychloroquine on commencement of medication, with 10% performing baseline examination at 1 year. 5% of clinicians listed patients for a routine appointment. Certain factors would prompt ophthalmologists to review patients on hydroxychloroquine in less than 6 months. The most common of these was decreased visual acuity and concurrent treatment with medications that can adversely affect the macula. Other factors prompting more urgent review included pre-existing macular disease and high-dose of hydroxychloroquine. Sixty percent of clinicians performed annual screening. Most commonly performed screening tests included BCVA and dilated fundal examination (100%). Regarding which study clinicians found most beneficial in their screening practice, 35% found OCT most useful, 20% found FAF and visual fields most useful. 10% found slit lamp examination and ERG most useful respectively. Clinicians have also reported the need to discontinue hydroxychloroquine. Most physicians have had to discontinue hydroxychloroquine in < 2 patients/ 5 years (47.06%).

Conclusions:

This survey has acquired significant information relating to the performance of hydroxychloroquine screening in Irish clinics. This research demonstrates the need to liaise with our colleagues in the rheumatology and dermatology services regarding hydroxychloroquine. This survey highlights the need for further education and national guidelines regarding hydroxychloroquine screening in ophthalmology clinics.

Intravitreal Anti-Vascular Growth Factor for Macular Edema Secondary to Retinal Arterial Macroaneurysm (RAM).

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Objectives:

To report logistics, experience and the outcome of treatment of the Macular edema secondary to RAM with Intravitreal Anti-vascular growth factor (Aflibercept) without laser photocoagulation

Methods:

A case report of 76 years old woman, with macular edema secondary to RAM, treated with multiple 2.0mg intravitreal Aflibercept. Patient's baseline characteristics, treatment history and outcomes following aflibercept administration are presented. We document the clinical course of this patient based on colour fundus photography and OCT.

Results:

Patient treated successfully with Anti VEGF Aflibercept without laser photocoagulation. We observed complete regression in macular edema, and an increase in visual acuity.

Conclusions:

Intravitreal anti-VEGF therapy without laser photocoagulation may be an effective treatment option in cases of macular edema due to RAM.

More Than Meets The Eye

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Introduction:

Rhabdomyosarcoma is a rare childhood cancer and the primary site of ophthalmic Rhabdomyosarcoma is the orbit.

Case Presentation:

A 5 year old was referred by GP for Right eye pre septal cellulitis. He was brought by his mother who gave a history of Right upper lid swelling since 2 weeks. She assumed the swelling was due to trauma as patient was accidentally hit by his brother while playing a month ago. The 5 year old boy however did not complaint of pain or decrease vision. Examination revealed localized right upper lid supero-medial swelling with a fixed, hard lump measuring approximately 3x2 cm in size. No proptosis seen. There was some restriction of eye movement on upgaze due to swelling. An urgent CT scan was ordered which revealed a 28x22x8mm homogenous enhancing lesion on the superomedial aspect of the right orbit with a mass effect on the globe. Biosy was done that showed fibro adipose tissue extensively infiltrated by malignant tumor with solid growth pattern consistent with Rhabdomyosarcoma. Patient is currently undergoing Chemotherapy in Our Lady's Children's Hospital, Crumlin.

Conclusions:

Paediatric patients with any superomedial mass/lump should have urgent imaging. We should not be swayed by the diagnosis made when a patient is referred to us. The prognosis of Rhabdomyosarcoma has improved significantly due to the shift to the chemotherapy/radiation regimens.

Localised Amyloidosis of the Conjunctiva Secondary to Hypogammaglobulinaemia

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Objectives:

To describe a rare case of secondary localised amyloidosis of the tarsal conjunctiva

Methods:

A 77-year-old female was referred to the ophthalmology department by her general practitioner due to the presence of a suspicious looking right lower lid lesion for 8 months. It was confined to the medial tarsal conjunctiva surrounding the punctum, and was solid and nodular in nature. It bled easily on contact. Visual acuity in each eye was logMAR 0.1 and she had no evidence of proptosis, globe displacement, diplopia or limited ocular motility. She underwent an initial incisional biopsy followed by total excision of the lesion. She was also thoroughly investigated for systemic disease.

Results:

The incisional biopsy showed deposits of acellular hyaline-like material with a foreign body type reaction. The material stained positively with Congo Red and showed apple green birefringence on polarised light. The subsequent excisional biopsy showed a similar lesion, namely, dermal amyloid deposition. Systemic investigations showed no evidence of cardiac, renal or liver dysfunction. However, on serum protein electrophoresis, a mild hypogammaglobulinaemia was present (6.3g/L, normal range: 8.0-13.5).

Conclusions:

Conjunctival amyloidosis, once considered a benign, localised disease without systemic implications, is now known to be associated with systemic amyloidosis in up to 6% of patients. However, the manifestation of systemic amyloidosis in a patient with hypogammaglobulinaemia is extremely rare. It is of utmost importance that appropriate systemic investigations are carried out in every patient presenting with ocular amyloidosis.

Prevalence of Retinal Tears and/or Retinal Detachments Requiring Surgical Intervention after Intravitreal Injection – 3-year audit in RVEEH

Surzhenko I, Kilmartin D.

Royal Victoria Eye & Ear Hospital, Dublin

Purpose:

To identify and compare to the international data the % rate of retinal detachment or tear complications that needed vitreo-retinal surgery after intravitreal injections; To analyse cases of RD or tears those were caused by intravitreal injections; To identify if improvement in the technique of intravitreal injections is needed

Methods:

All intravitreal injections performed under the care of a single consultant between Jan 2013 and Dec 2015 were identified from HIPE reporting database. All cases of retinal detachment or tear requiring surgical intervention over the same time period identified from HIPE database and cross-referenced against the identified intravitreal injection list. All retinal detachment cases due to trauma, diabetes mellitus and postoperative complications were excluded from analysis. The medical records of cases identified as having had any intravitreal injection and subsequent RD surgery were reviewed.

Results:

A total 399 patients received 2635 intravitreal injections into 492 eyes from 2013 to 2015. Mean number of intravitreal injections per eye: 5.36 (Range 1-23). Mean follow-up 1.9 years. Overall prevalence of rhegmatogenous retinal detachment after intravitreal injections – 0 %.

Conclusion:

Current intravitreal injection technique is safe to practice. Rhegmatogenous retinal detachment after intravitreal injections is a rare complication. Special attention should be paid examining patient that had previous intravitreal injections abroad.

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.

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