Irish College of
Ophthalmologists
Eye Doctors of Ireland
Protecting your Vision

Irish College of Ophthalmologists

Annual Conference 2023

Contents

Tim Fulcher

President's Welcome Message

Dear Colleagues,

It is my great pleasure to welcome you all to the 2023 Irish College of Ophthalmologists Annual Scientific Meeting, taking place in the beautiful and historic town of Killarney.

As Ophthalmologists, we are all dedicated to the study and treatment of eye diseases, and this conference provides us with an invaluable opportunity to exchange ideas and learn from one another. Over the next few days, we will hear from leading experts in the field, who will share their knowledge and insights into the latest advances in ophthalmology research and clinical practice.

This year's conference includes symposia on Medical Retina, Ocular Tumours, Keratitis and the Assessment and Management of the Watery Eye. I would like to thank and extend a warm welcome to all of our visiting speakers who have taken the time to join us. I look forward to listening and learning from their knowledge and experience.

The Mooney lecture will be delivered by Professor David Garway-Heath entitled 'Mitochondrial Function – a Potentially Modifiable Risk Factor for Glaucoma'. Other highlights of the programme include workshop sessions, paper and poster presentations and the European Society of Ophthalmology lecture.

In addition to the scientific programme, there will be ample opportunities for networking and socialising. I encourage you all to take advantage of these opportunities to forge new connections and strengthen existing ones.

Killarney is a town of rich history and natural beauty, and I hope that you will also take some time to explore its many attractions during your stay. From the stunning landscapes of Killarney National Park to the quaint charm of the town's shops and pubs, there is something here for everyone.

I would like to express my sincere thanks to the organisers of this conference for their hard work and dedication in putting together such a wonderful programme. I wish you all a productive and enjoyable conference, and look forward to the exciting discussions and collaborations that will emerge from this meeting.

Warm regards,

TIM FULCHER
President
Irish College of Ophthalmologists.
May 2023

Monday 22nd May

11.20am **Official Welcome**
Mr Tim Fulcher
President, Irish College of Ophthalmologists

11.30am **Updates in Medical Retina**
Chair: Dr Louise O'Toole,
Mater Private Hospital, Dublin

Recent Phase 3 Clinical Trial Results on GA Treatment
Dr Stela Vujosevic
Head of Medical Retina Unit, MultiMedica Scientific Institute of Recovery and Care, Milan

Can we Address the Discordance between Function and Morphology in GA Clinical Trials
Prof Usha Chakravarthy (virtual)
Professor of Ophthalmology and Vision Sciences, Queen's University Belfast

Biosimilars: What are they? Do we need them?
Dr Robert Braunstein
Clinical Professor of Ophthalmology, Vagelos College of Physicians and Surgeons, Columbia University, New York

1.00pm **Lunch**

2.00pm **The Watery Eye – from Start to Finish**
Chair: Mr Tim Fulcher, President, Irish College of Ophthalmologists

Assessment and Investigations of Watery Eye
Mr Gareth Higgins
Consultant Ophthalmic Surgeon,
University Hospital Waterford

Managing the Eyelid Disease
Mr Micheal O'Rourke
Consultant Ophthalmic Surgeon,
Royal Victoria Eye and Ear Hospital, Dublin

The Great DCR Debate: Endoscopic
Ms Rizwana Khan
Consultant Ophthalmic Surgeon,
Royal Victoria Eye and Ear Hospital, Dublin

What to Do when DCR is not an Option?
Ms We Fong Siah
Consultant Ophthalmic Surgeon, Mater Private Hospital, Dublin

The Great DCR Debate: External
Ms Elizabeth McElnea
Consultant Ophthalmic Surgeon, University Hospital Galway

3.30pm **Short Presentations**
Chair: Prof Colm O'Brien,
Mater Misericordiae University Hospital, Dublin

The Annual Conference of the Irish College of Ophthalmologists: Examining over a Decade of Trends
Khadija Gull

A Feasibility Study for the Classification of Diabetic Macular Oedema from Optical Coherence Tomography Scans using Deep Learning
Cathal Breathnach

Maximizing Corneal Endothelial Integrity
Marchien Dallinga

Analysis of Metformin's Effect on Human Glaucomatous Lamina Cribrosa Cells
Daire Hurley

Patterns of Neuronal and Central Visual Field Loss in Optic Neuritis at Outcome Identified by Machine Learning
Brian Woods

Ocular Surface MicroRNA Associated with Chronic Ocular Graft versus Host Disease
Emily Greenan

The Endoplasmic Reticulum Stress Response in Glaucoma Lamina Cribrosa Cells
Caoimhe Normile

4.30pm **Refreshments**

5.00pm **Mooney Lecture 2023**
Introduction: Prof Colm O Brien, Chair Scientific & PCS Committee, Irish College of Ophthalmologists

Mitochondrial Function - a Potentially Modifiable Risk Factor for Glaucoma
Prof David Garway-Heath
Consultant Ophthalmic Surgeon, Moorfields Eye Hospital, London;
Glaucoma UK Professor of Ophthalmology for Glaucoma and Allied Studies at the Institute of Ophthalmology, University College London

Tuesday 23rd May

8.00am **Breakfast Session kindly supported by Bayer**
Chair: Miss Marie Hickey Dwyer,
University Hospital Limerick

Speaker: Dr David M. Brown, Clinical Professor of Ophthalmology, Cullen Eye Institute, Baylor College of Medicine, Houston

9.30am **Short Presentations**
Chair: Mr John Stokes, Consultant Ophthalmic Surgeon,
University Hospital Waterford

Optic Nerve Head Perfusion and Optic Neuropathy in Carriers of Leber Hereditary Optic Neuropathy-Associated Mitochondrial Mutations
Clare Quigley

Uveal Melanoma in Ireland
Alison Greene

Keratoconus Screening in Children with Down Syndrome
Barry Power

Patient Reported Outcomes of Serum Eye Drop Therapy for Ocular Surface Disease at the Royal Victoria Eye and Ear Hospital
Aoife Smyth

Single Centre Real World Outcomes for Neovascular Age-Related Macular Degeneration of the Use of Faricimab in Poor Responders to Anti-Vascular Endothelial Growth Factor in the United Kingdom
Christine Goodchild

Drive-Through IOP Clinic during the SARS-Cov-2 Pandemic: 18 Month Outcomes
Emer Doolan

Post-Enucleation Outcomes of Patients with Uveal Melanoma
Hanan Elshelmani

10.30am **European Society of Ophthalmology (SOE) Lecture 2023**

Medical Ophthalmology - A Personal Journey
Dr Geraldine Comer
Consultant Medical Ophthalmologist, CHO2,
Community Healthcare West

11.00am **Refreshments**

11.30am **Ocular Tumours Clinical Symposium**
Co-Chairs: Mr Noel Horgan,
Royal Victoria Eye and Ear Hospital, Dublin &
Dr Fiona D'Arcy, Progressive Vision, Dublin

Ocular Oncology: Who, When, How Should I Refer?
Prof Heinrich Heimann
Consultant Ophthalmic Surgeon,
Royal Liverpool University Hospital, Liverpool

Conjunctival Pigmented Tumours : When to Worry?
Dr Carol Shields (virtual)
Director of Ocular Oncology Service at Wills Eye Hospital, Philadelphia

Uveal Melanoma: Our Current Understanding?
Prof Heinrich Heimann
Consultant Ophthalmic Surgeon,
Royal Liverpool University Hospital, Liverpool

Metastatic Uveal Melanoma: Current and Future Strategies
Prof John Crown
Consultant Medical Oncologist,
St Vincent's Medical Group, Dublin

1.00pm **Lunch**

2.00pm **Rapid Fire Posters**

2.30pm **Managing the Nuances of Medico-legal Risk**
Ms Alicia Hayes, BL
Case Manager, Medical Protection Society

3.00pm **OCT Interpretation in Macular Diseases**
Dr Olya Scannell, Consultant Ophthalmologist,
CH07 Royal Victoria Eye and Ear Hospital, Dublin

3.45pm **Refreshments**

4.15pm **Workshop Session kindly supported by Alimera Sciences**

Speaker: Ms Deirdre Townley, Consultant Ophthalmic Surgeon and Ophthalmology Clinical Lead, University Hospital Galway

Speaker: Dr Soma Chakrabarti, Consultant Ophthalmologist, Joint Clinical Director specialising in Uveitis and Diabetic Eye Disease, Greater Glasgow and Clyde

Wednesday 24th May

9.00am **Irish College of Ophthalmologists Annual General Meeting**
Chair: Mr Tim Fulcher,
President, Irish College of Ophthalmologists

10.00am **Short Presentations**
Chair: Miss Yvonne Delaney, Dean of Postgraduate Education, Irish College of Ophthalmologists

Cataract Surgery Outcomes in Uveitis Patients at the Royal Victoria Eye and Ear Hospital Dublin
Sarah Powell

Ocular Toxicity Secondary to Hydroxychloroquine: Prevalence in an Irish Patient Cohort
Jill Huang

Intra-Operative En-Face Frozen Section for Margin Control during Periocular Basal Cell Carcinoma Excision
Grace McCabe

Outcomes of Low-Risk versus High-Risk Full Thickness and Posterior Lamellar Keratoplasty
Esraa Hegazy

Abnormal Red Reflex Referrals: A Two-year Retrospective Cohort Study of Referrals to a Tertiary Paediatric Ophthalmology Department
Liam Mulcahy

1 Year Outcomes of Paul Tube Glaucoma Implants in the Mater Misericordiae University Hospital
Ian Brennan

11.00am **Refreshments**

11.30am **Diagnosis and Management of Corneal Infections**
Chair: Prof Conor Murphy,
Royal Victoria Eye and Ear Hospital, Dublin

Atypical Keratitis: Acanthamoeba
Mr Tom Flynn
Consultant Ophthalmic Surgeon, Bon Secours Hospital, Cork

Update in Bacterial Keratitis
Ms Sarah Moran
Consultant Ophthalmic Surgeon, South Infirmary Victoria University Hospital, Cork

Fungal Keratitis: An Update on the Diagnosis and Treatment of Fungal Infections of the Cornea
Mr Barry Quill
Consultant Ophthalmic Surgeon, Royal Victoria Eye and Ear Hospital, Dublin

Herpes Simplex Keratitis: Challenges in Diagnosis and Clinical Management
Ms Nikolina Budimlija
Consultant Ophthalmic Surgeon, Institute of Eye Surgery, Waterford

Patient Experience
Ms Eleanore O'Gorman

1.00pm **Presentation of ICO Medals**

Conference Close

Conference Posters

Characterization of Optic Nerve Swelling with Oral Fluorescein Angiogragraphy and Ultra Widefield Retinal Imaging
Robert Brady

Retrospective Analysis of Presenting Features and Visual Outcomes for Paediatric Patients Diagnosed with Idiopathic Intracranial Hypertension in a Single British Centre
Robert Brady

Effectiveness and Efficiency of Nurse-Led Glaucoma Clinics: A Retrospective Service Evaluation at Beaumont Hospital
Ian Brennan

Mini-DSAEK in Macro-Corneal Perforations: Our Experience
Cian Collins

A Treatment Dilemma in a Case of Adult Orbital Alveolar Rhabdomyoscarcoma
Amy Coman

Mechanosensitive Calcium-Ion Channel Piezo1 in Glaucoma Lamina Cribrosa Fibrosis
Amy Coman

Retrospective Study Comparing Response to Treatment Among Neovascular Age-Related Macular Degeneration Patients Deemed Non-Responsive to Bevacizumab and Changed To Aflibercept or Ranibizumab
Liam Connolly

VEXAS, A Recently Reported Haemato-Immune Disease Presenting to an Ophthalmic Emergency Department
Marcus Conway

The Use of Dichoptic Therapy for Adult Amblyopia
Arthur Cummings

Macular Hole 24 Hours Following a Trauma
Maha Elsayed

Vitamin A Deficiency with Visual Loss in Autistic Children
Richard Farnan

A Subacute Right Optic Neuropathy in a Healthy 21-Year Old Male
Mark Forristal

Clinical Validation of Patients Overdue for Outpatient Follow-Up, and Allocation of these Patients to Clinics in a Tertiary Referral Glaucoma Service: A Service Improvement Project
David Gildea

A Case with Retinal Whitening Which Lead to an Unexpected Diagnosis
Christine Goodchild

A 10 Year Review of Open Globe Injuries in a Tertiary Referral Hospital
Alison Greene

Microbiological Profile of Culture Proven Cases of Endophthalmitis: A 10 Year Retrospective Study
Alison Greene

Visual Failure from Hypovitaminosis A in Three Children with Severe Autism Spectrum Disorder; the Need for Vitamin Replacement
Glynis Hanrahan

MOG Igg Optic Neuritis in the Paediatric Population – An Irish Case Series
Deirdre Harford

Serum Eye Drops for Ocular Surface Disease - The Irish Experience
Deirdre Harford

The Use of Amniotic Membrane Transplantation in the Treatment of Stevens-Johnsons Syndrome and Toxic Epidermal Necrolysis in the Paediatric Population
Esraa Hegazy

A Five Year Analysis of Corneal Investigations Performed in an Irish Tertiary Hospital
Rory Holohan

"Say What You See", Characteristic OCT and Fundal Changes in a Rare and Underreported Macular Pathology – A Case Series
Alan Hopkins

A Case of Irreversible Vision Loss Secondary to a Laser Pointing Device
Alan Hopkins

Ultrathin Descemet Stripping Automated Endothelial Keratoplasty versus Descemet Membrane Endothelial Keratoplasty - A Systematic Review & Meta-Analysis
Daire Hurley

Visual Outcome of Early Diagnosis and Vitrectomy in Toxocariasis Panuveitis
Mohib Naseer

A Traumatic Tail
Joseph Keenan

Pituitary Adenomas – The Incidence of Visual Field Defects in a Sample of Ophthalmic Patients
Áine Kelly

The Impact of the National Diabetic Retinal Screening Programme on the Training of Ophthalmology Trainees in the Performance of Diabetic Laser Procedures
Mollie Kelly

Extent of Paediatric Ophthalmic Consults in Temple Street Hospital in Dublin
Aniela Krezel

Assessment of Association between Rate of Emergency Retinal Detachment Repair and Weather in University Hospital Limerick
Emilie Mahon

Conference Posters

Audit of Patient Wait Times Attending for Intravitreal Injections and Review of the Literature of Patient Psychological Impact of Wait Times
Emilie Mahon

Above the Midline; A Case Describing the Importance of a Clinical Sign
Grace McCabe

Paediatric Orbital Cellulitis Related to Invasive Group A Streptococcus
Kealan McElhinney

Chemical Injuries in University Hospital Waterford: Looking at Lime
Aisling McGlacken-Byrne

A Cluster of Acanthamoeba
Aisling McGlacken-Byrne

The Diagnosis and Treatment of a Rare Case Periorbital Necrotising Fasciitis Caused by Group A β-haemolytic Streptococcus and Herpes Simplex Virus 1 in a Woman with Insulin Dependent Diabetes
Aisling McGlacken-Byrne

Unusual Case of Bilateral Choroidal Effusion
Diana Minasyan

Printed Biomechanical Model of the Human Lamina Cribrosa
Simon Neary

Functional and Anatomical Outcomes in Refractory and Large Macular Holes Treated with an Intraretinal Fluid Expansion Technique
Brian Ó Tuama

Surgical Trends in Glaucoma: An Analysis of Glaucoma Procedures Performed in MMUH from 2012 to 2022
Pádraig O'Connell

Identifying Keratoconus Using an Automated Machine Learning Model
Pádraig O'Connell

The Role of TAX1BP1 in Fibrosis of the Optic Nerve Head in Glaucoma
Eabha O'Driscoll

Review of the Glaucoma Service Referral Process in a Major Specialist Centre in Ireland
Eabha O'Driscoll

Six Month Pilot Data from the NERIECS High Volume Cataract Surgery Pathway in MMUH
Fionn O'Leary

Clinical Audit of the Rapid Access Clinic - Mater Misericordiae
Eimear O'Leary

A Case of Retinal Detachment Due to Myopic Traction Maculopathy Treated with Macular Buckle Surgery
Amy O'Regan

Timing of Surgery and Visual Outcomes in Primary Rhegmatogenous Retinal Detachment
Amy O'Regan

Circadian Regulation of the Inner Blood Retina Barrier as a Mechanism for the Development of Dry AMD
Matthew O'Riordan

Radial Keratotomies and Primary Open Angle Glaucoma – A Case of Keeping Focus under Pressure
Sarah Powell

Orbital Tumor - A Case Series
Qirat Qurban

White Retinal Tumour
Maedbh Rhatigan

Improving Sustainability of Diabetic Retinopathy Screening
John Smith

Safety and Effectiveness of Intravitreal Dexamethasone Implant for the Treatment of Refractory Cystoid Macular Oedema in Galway University Hospital
Addon Teye-Botchway

Measuring Outcomes in Lamellar Corneal Transplantation
Addon Teye-Botchway

Evaluation of New Onset Neovascular Age-Related Macular Degeneration at Sligo University Hospital
Julia Zhu

Dr Stela Vujosevic

Dr Stela Vujosevic

Head of Medical Retina Unit, MultiMedica Scientific Institute of Recovery and Care, Milan
Researcher, University of Milan, Statale, Milan

Dr Vujosevic is a retina specialist, head of Medical Retina Unit, IRCCS MultiMedica, Milan and Researcher at the University of Milan, Italy, already qualified as Full Professor in 2020. After Medical School and Specialization in Ophthalmology she obtained the PhD in Clinical Methodology, Endocrinological and Diabetological Sciences at the University of Padova, Italy. Fellowship in Medical Retina at the Moorfields Eye Hospital in London with Professor Alan C. Bird. Research Fellowship at the Reading Centre, Moorfields Eye Hospital in London. She is a fellow of the ARVO and the EBO. Elected Member of Diabetic Retinopathy Expert Committee of the EVICRnet, Macula Society, Imaging Subspecialty Section of the EURETINA, Board of the EAsDEC, SISO.

Major awards include: "The Power List 2022", the Top 100 most influential ophthalmologists in the world by the Ophthalmologist; TOP LIST of excellent Women in European Vision Research and Ophthalmology 2021 by the European Vision Institute; and Women's Leadership Development in ARVO Program. Dr Vujosevic serves as the Managing Editor of the Ophthalmic Research, the Associate Editor of the AJO Case Reports, and the EBM of the IOVS and the Acta Ophthalmologica. She has been participating as Principal Investigator in numerous research projects, with both Italian and international collaboration, and with EU funding.

Her major research interests are vascular and degenerative retinal and choroidal diseases, with particular interest in the study of imaging, biochemical and functional biomarkers and diagnostic techniques in ophthalmology.

Prof Usha Chakravarthy

Prof Usha Chakravarthy

Honorary and Emerita Professor of Ophthalmology and Vision Science,
Queen's University of Belfas, Institute of Clinical Science, Royal Victoria Hospital, Belfast

Prof Usha Chakravarthy is a retina trained ophthalmologist from the UK and has been a member of the macula society since 2000. She was responsible for the macular service in the Belfast Trust from 2010 to 2015 and also was Director for Ophthalmology Services with responsibility for over 100 medical staff for many years. Her interest in research commenced with her PhD on the therapeutic potential of ionising radiation on intraocular cellular proliferation and the molecular expression of vasoactive peptides in the retina with profiling of gene expression under simulated hyperglycemia in in-vitro and in-vivo studies. Consolidating this work through clinical translational methods she gained the Welcome University Award and large medical research council grants and was appointed full Professor at Queens University in 1999. She has acted as the study chair for many national and international clinical trials, cohort studies and epidemiological investigations. She has also chaired advisory groups and was a member of key task forces in retinal diseases including the International AMD Alliance, Laskar Foundation and Retina International.

She was a member of the Credentials, Scientific and Awards committees for the Macula society and program committee for ARVO, the German Research Foundation, The French Research Foundation, The Austrian Research Panel. She has delivered multiple eponymous lectures in the UK and abroad. Some notable awards include the Henkind, Bowman, Gass Awards from the Macula Society, Alan Alderman award and Commander of the Order of the British Empire (CBE) for services to Ophthalmology in the UK. She has been on the adjunct faculty at Genentech/Hoffman La Roche in 2021, the Duke NUS Singapore and she mentors many trainees and faculty across the world. She is currently the Honorary and Emerita Professor of Ophthalmology and Queens University, and is an ambassador for Invest Northern Ireland

Dr Robert A. Braunstein

Dr Robert A. Braunstein

Clinical Professor of Ophthalmology, Vagelos College of Physicians and Surgeons, Columbia University, New York

A graduate of RCSI, Dr Braunstein received his Retinal Fellowship training with Alan Bird in Moorfields Eye Hospital and with Don Gass at the Bascom Palmer Eye Institute.

Dr. Braunstein was previously Chairman of the Department of Ophthalmology at the Veterans Administration Hospital and at Morristown Medical Center in New Jersey and has taught Healthcare Economics at both Columbia and Rutgers University. In addition to being the recipient of the American Academy of Ophthalmology's Senior Honor Award, Dr. Braunstein has served on the Executive Committee of the Macula Society, and is presently a consultant for the FDA's Ophthalmic Device Committee as well as a Liveryman in the City of London's Worshipful Company of Spectacle Makers.

Mr Gareth Higgins

Mr Gareth Higgins

Consultant Ophthalmic Surgeon, University Hospital Waterford
Honorary Clinical Senior Lecturer, University College Cork

Mr Gareth Higgins graduated in 1998 from University College Cork. From 1999-200, he was Ophthalmic Research Fellow at the Department of Academic Surgery, University College Cork, studying the Immunology of Neovascular Age-related Macular Degeneration. His thesis investigated possible links between sunlight-related oxidative stress and cytokine mediated angiogenesis, for which he was awarded a Medical Doctorate (MD).

From 2001-2010, Mr. Higgins trained as an Ophthalmic Surgeon in Cork, Liverpool and Perth. His general training was followed by fellowships in Oculoplastic Surgery (Liverpool) and Corneal and Anterior Segment Disease (Perth, Western Australia).

Mr. Higgins is a Fellow of the Royal College of Surgeons of Edinburgh (FRCSEd) and the Royal Australian and New Zealand College of Ophthalmologists (RANZCO) and a Member of the Royal College of Ophthalmologists (MRCOphth). His areas of interest include oculoplastics, in particular periocular reconstruction following tumour excision, and corneal disease. Mr. Higgins is a Consultant Ophthalmic Surgeon at University Hospital Waterford and an Honorary Clinical Senior Lecturer at University College Cork.

Mr Michéal O'Rourke

Mr Michéal O'Rourke

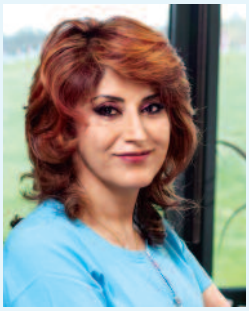
Consultant Ophthalmic Surgeon, Royal Victoria Eye and Ear Hospital, Dublin

Mr Michéal O'Rourke is a graduate of Trinity College, Dublin. He completed the ICO / RCSI ophthalmic surgery training scheme in 2019. He subsequently pursued two prestigious international fellowships at Manchester Royal Eye Hospital, UK and The Royal Victoria Eye and Ear Hospital, Melbourne in the subspecialty of orbital, lacrimal and oculoplastic surgery.

He is currently working at The Royal Victoria Eye and Ear Hospital, Dublin delivering care to those on the oculoplastics waiting lists. He also works at St James' Hospital, Dublin where he has integrated into the existing networks around orbital fractures, hyperthyroidism, periocular dermatology and tumour reconstruction. He also established a centralised subspecialty orbital, lacrimal and oculoplastic service for the paediatric cohort at Children's Health Ireland, Crumlin modelled on the service he trained in on fellowships. He recently commenced a private clinic at Northbrook Eye Clinic in Ranelagh.

He has a keen research interest and was awarded a PhD in 2015 for his clinical and experimental research in the area of ocular immunology. He has published in all the major journals within the subspecialty, as well as presenting at many international society meetings and won many national and international awards and bursaries. He currently sits as a board member of the Research Foundation at the Royal Victoria Eye and Ear Hospital, Dublin. He has a particular interest in the area of thyroid eye disease and its medical management with timely immunomodulatory agents to reduce activity. He has published on the role of botulinum toxin to the lacrimal gland in refractory epiphora.

Ms Rizwana Khan



Ms Rizwana Khan

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

Ms Rizwana Khan is a Consultant surgeon at the Royal Victoria Eye and Ear Hospital sub-specialising in orbital and oculoplastic surgery. She has experience in the use of new technologies and minimally invasive surgical techniques like endoscopic orbital surgery, CO2 laser for oculoplastic surgery and the use of image guided navigation in orbital surgery.

She also specialises in multifocal intraocular lens implantation.

She is the co-director of a fellowship programme in Orbits, Oculoplastics and Neuro-Ophthalmology in the Royal Victoria Eye and ear hospital.

She is currently undertaking a doctorate with RCSI while guiding her trainees in surgical training and research

Ms We Fong Siah

Ms We Fong Siah

Consultant Ophthalmic Surgeon, Mater Private Hospital, Dublin

Ms We Fong Siah graduated from Trinity College Dublin in 2005. She has worked in eye departments at teaching hospitals in Dublin, Galway and Waterford. She completed her ophthalmic higher surgical training in Ireland in 2014. Ms. Siah underwent a six-month fellowship training in cornea and external eye disease in Newcastle Upon Tyne before undertaking a one-year fellowship training in oculoplastic, lacrimal and orbital surgery at the prestigious Corneo-Plastic Unit at Queen Victoria Hospital NHS Foundation Trust, East Grinstead. She obtained further experience in oculofacial aesthetics and ophthalmic plastic reconstructive surgery as a visiting fellow at the Moran Eye Center, University of Utah, Salt Lake City.

Ms. Siah's subspecialty interests include cataract surgery, eyelid surgery (eyelid malposition, eyelid lumps, eyelid cancer, facial nerve palsy, aesthetic eyelid surgery), oculofacial aesthetics (non-surgical), watery eye disorder, dry eye disorder and facial dystonia (blepharospasm and hemifacial spasm).

Ms. Siah has over 20 publications in reputable peer-reviewed journals and has presented her work at national and international ophthalmology conferences. She is a member of the British Oculoplastic Surgery Society, the Royal College of Ophthalmologists and the Irish College of Ophthalmologists.

Ms Elizabeth McElnea

Ms Elizabeth McElnea

Consultant Ophthalmic Surgeon, University Hospital Galway

Ms McElnea is a graduate of University College Dublin. She has completed fellowship training in oculoplastic, orbit and lacrimal disease at the Royal Victorian Eye and Ear Hospital in Melbourne, Victoria and in cornea and anterior segment disease at Royal Perth Hospital in Perth, Western Australia. She currently works as a Consultant Ophthalmologist in University Hospital Galway.

Prof David Garway-Heath

Prof David Garway-Heath

Consultant Ophthalmic Surgeon, Moorfields Eye Hospital, London
Glaucoma UK Professor of Ophthalmology for Glaucoma and Allied Studies, Institute of Ophthalmology, University College London

David (Ted) Garway-Heath is Glaucoma UK Professor of Ophthalmology for Glaucoma and Allied Studies at the Institute of Ophthalmology, University College London (UCL), and Consultant Ophthalmic Surgeon at Moorfields Eye Hospital, London, UK. In addition to his clinical work, he leads Vision Assessment and Imaging Research at the Biomedical Research Centre of the UK National Institute for Health Research. He also leads 'of the whole building' workstream for the new Moorfields Eye Hospital and UCL Institute of Ophthalmology centre in London.

Professor Garway-Heath is immediate Past President of the European Glaucoma Society (EGS), Chair of the Membership Committee of the international Glaucoma Research Society (GRS), Vice President of the international Imaging and Perimetry Society (IPS) and Secretary to the Imaging Morphometry Association for Glaucoma in Europe (IMAGE). He is past member of the ARVO Glaucoma Section Program Committee, which he chaired in 2009, past Chairman of the UK & Eire Glaucoma Society, and has co-chaired the World Glaucoma Association (WGA) Consensus Meetings.

During his time as President of the EGS, from December 2017 to December 2020, David Garway-Heath built on the strong and innovative leadership in pursuit of the EGS' vision to promote the best possible well-being and minimal glaucoma-induced visual disability in individuals with glaucoma. Promoting patient support and advocacy, and strengthening collaboration with the American Glaucoma Society (AGS) were among the Society's key initiatives that he initiated and implemented.

Professor Garway-Heath's research focuses on the development and evaluation of the techniques for effective diagnosis, monitoring and management of glaucoma, the identification of risk factors for glaucoma progression, and decision-support systems for healthcare delivery services.

After his training at Moorfields Eye Hospital, London, UK, David (Ted) Garway-Heath completed his research fellowship as Visiting Assistant Professor at the Jules Stein Eye Institute, UCLA, Los Angeles, USA in 2000. He became Clinical Research Lead for the Glaucoma Research Unit at Moorfields Eye Hospital on his return to the UK, where he built a strong multidisciplinary team of clinician researchers and research scientists, and developed an extensive collaborative research network both nationally and internationally.

His work has contributed to the understanding of structure-function relationship in glaucoma, and the anatomical map that he invented (known as Garway-Heath map) is used worldwide in research in this field and has been incorporated into FORUM Glaucoma Workplace, a clinical tool developed by Zeiss for the management of glaucoma. He also pioneered a technique for analysing optic nerve head images, the Moorfields Regression Analysis, which contributed to the worldwide acceptance and use of imaging in the clinical management of glaucoma. This work was selected by University College London to showcase its excellence in medical research. Professor Garway-Heath conducted the UK Glaucoma Treatment Study, the first randomized placebo-controlled trial to provide evidence for visual field preservation in glaucoma patients with an intraocular-pressure- lowering drug. This was the first glaucoma trial published in The Lancet, and the study design enabled a considerable reduction in the period needed to identify treatment effects.

David (Ted) Garway-Heath has published extensively, and has been recipient of many awards, including the UK NHS Gold Clinical Excellence Award, the AGS International Scholar Award, Gold Medal of the Greek Glaucoma Society, Alcon Research Institute Award, the World Glaucoma Association Senior Clinician Scientist Research Recognition Award, and the National Institute for Health Research Senior Investigator Award (one of very few in Ophthalmology in the UK). The team under his supervision was the Overall Winner of the UK Medical Research Council Translational Research Innovations, encompassing all medical fields, for their work on the Moorfields Motion Displacement Test, a new visual field test for glaucoma.

Prof. Garway-Heath has been consecutively voted onto The Ophthalmologist power list recognising the top 100 most influential people who have made the biggest impact in the field of ophthalmology worldwide. Recently, he ranked among the top 10 on this list.

He was also voted 'top mentor worldwide' in the 2019 'power list' for his work mentoring younger

colleagues and helping them develop leadership skills. He has also been driving a mentorship programme for the EGS called Next Generation Partnership (NGP). Since its launch in 2017, the NGP programme has enrolled around 100 glaucoma specialists across all European countries. Discussions are ongoing between the EGS and AGS about possible future collaborations on this initiative.

Dr David M. Brown

Dr David M. Brown

Clinical Professor of Ophthalmology, Cullen Eye Institute, Baylor College of Medicine, Houston
Vice-Chair for Research, Blanton Eye Institute, Houston Methodist Hospital

Dr. Brown is the director of research at Retina Consultants of Texas and he chairs the Medical Leadership Board of Retina Consultants of America and serves on the RCA board of directors. Dr. Brown graduated from Baylor College of Medicine with highest honors and completed ophthalmology and retina training at the University of Iowa where he was a Thomas Heed Fellow, a Hermann Knapp Fellow, and was awarded the Ron Michels Fellowship award presented to the top retinal surgery fellow in the US in 1994.

Dr. Brown is an elected member of the Macula Society, the Retina Society, and the Club Jules Gonin and his honors include the American Academy of Ophthalmology Honor Award (2000), the American Society of Retina Specialists Honor Award (2008), the ASRS Senior Honor Award (2010), the AAO Senior Honor Award (2014), Retina Hall of Fame inaugural inductee (2017), and continuous election as one of the "Best Doctors in America" 2007-2022 and "Texas Super Docs" from 2009-2022.

Dr Brown's research and clinical interests are focused on macular surgery, age-related macular degeneration, gene therapy, retinal vascular disease, and diabetic retinopathy. He has published and written over 400 national meeting presentations, abstracts, and scientific papers including many of the primary papers establishing the use of anti-VEGF agents for AMD, retinal vein occlusion, and diabetic retinopathy.

Dr. Brown also serves as the consultant retina specialist for NASA for all ongoing and long-term space flight astronauts.

Dr Geraldine Comer

Dr Geraldine Comer

Consultant Medical Ophthalmologist, CHO2, Community Healthcare West

Dr Geraldine Comer graduated from University College Galway and completed her Ophthalmic training in Waterford and Limerick, before commencing as Clinical tutor in Ophthalmology at UCG along with sessional work as an Ophthalmic Physician for Mayo PCCC. She subsequently worked extensively in a busy private practice in the Galway Clinic along with hospital based medical ophthalmology at Galway University Hospital (GUH). For the last 7 years, Dr Comer has helped out the Community service and as covid hit, pivoted full time to Public Ophthalmology at GUH, being involved in all aspects of medical ophthalmology. Her particular interests are Community Paediatric Ophthalmology with a keen focus on children with additional needs. Dr Comer recently took up a new role as Consultant Medical Ophthalmologist for CHO2 West.

Mr Heinrich Heimann

Mr Heinrich Heimann

Consultant Ophthalmic Surgeon, Royal Liverpool University Hospital

Mr Heinrich Heimann completed his Ophthalmology training at the University Hospital Benjamin Franklin of the Free University in Berlin, Germany, in 1998. Since 2005, he holds a Consultant post at St Paul´s Eye Unit at the Royal Liverpool University Hospital with the subspecialties Surgical and Medical Retina and Ocular Oncology. In 2013, Mr Heimann took over as the Clinical Lead of the Liverpool Ocular Oncology Unit, one of the four Highly Specialised NHS Services for Adult Ocular Oncology in the UK.

Following a MD in corneal surgery in 1995, Mr Heimann completed the German Habilitation degree coordinating a prospective multicentre study on retinal detachment surgery in 2006; he was awarded the title of a Clinical Professor at the Free University Berlin in 2010, and then became Honorary Professor at Liverpool University in 2015. Heinrich Heimann worked as an elected Executive Board Member of the German Retina society between 2008-16. He currently is an Associate Editor of "Ophthalmologica" and the "Journal of Vitreoretinal Diseases" and section editor for Ocular Oncology in "Eye".

Mr Heimann has published more than 200 publications in peer-reviewed journals, mostly in the subspecialties of Vitreoretinal Surgery and Ocular Oncology, with a current h-index of 36. He has written more than 40 book chapters and co-edited five books on retinal imaging and vitreoretinal surgery.

Dr Carol Shields

Dr Carol Shields

Director of the Oncology Service, Wills Eye Hospital, Philadelphia
Professor of Ophthalmology, Thomas Jefferson University, Philadelphia

Dr Carol Shields completed her ophthalmology training at Wills Eye Hospital in Philadelphia and fellowship training in ocular oncology and ophthalmic pathology. She is Director of the Oncology Service, Wills Eye Hospital, and Professor of Ophthalmology at Thomas Jefferson University in Philadelphia, PA USA.

She has authored/co-authored 12 textbooks, 341 chapters in edited textbooks, over 2000 articles in major peer-reviewed journals, and given nearly 1000 lectureships with 74 named lectures. The 7 most prestigious awards that have honored her include:

- The American Academy of Ophthalmology Life Achievement Honor Award (2011) for contributions to the field of ophthalmology.
- Induction into the Academic All-American Hall of Fame (2011) for lifetime success in athletics and career.
- President of the International Society of Ocular Oncology (2013-2015) – the largest international society of ocular oncology.
- Ophthalmology Power List 2014, 2016, 2018, 2020 – Nominated by peers as one of the top 100 leaders in the field. In 2020, Dr. Carol Shields was listed at #1 in the Ophthalmology Power List.
- The Donders Award (2003) – given by the Netherlands Ophthalmological Society every 5 years. She was the first woman to receive this award.
- America's Best Eye Doctors [July 21, 2021] – Nominated by Newsweek magazine with an overall rank #7 of all ophthalmologists and rank #1 of all female ophthalmologists.
- Theodore Roosevelt Award – the highest honor the National Collegiate Athletic Association (NCAA) confers on an individual who earned a varsity letter for sports in college and who became a distinguished citizen of national reputation.

Each year the Oncology Service manages over 500 patients with uveal melanoma or retinoblastoma, and hundreds of other intraocular, orbital, and conjunctival tumors from the United States and abroad. She and her husband are the proud parents of 7 children, ranging in age from 22 to 34 years.

Prof John Crown

Prof John Crown

Consultant Medical Oncologist, St Vincent's Medical Group, Dublin
Professor of Medicine, University College Dublin and Professor of Translational Medicine, Dublin City University, Dublin

Consultant Medical Oncologist at St Vincent's Medical Group in Dublin, Ireland and is a Professor of Medicine in University College Dublin and a Professor of Translational Medicine in Dublin City University. He graduated Medicine and Science from University College Dublin, trained in general medicine in London and Dublin, and in Oncology at Mount Sinai Medical Centre New York and Sloan Kettering Memorial Cancer Centre. He subsequently served at the faculty at Memorial Sloan Kettering Cancer Centre and Cornell Medical School where he was an Assistant Professor. Professor Crown is the founder of The Irish Clinical Oncology Research group. He has authored and co-authored over 300 manuscripts in the field of cancer research. He is a member of The Royal Irish Academy and served in Seanad Eireann and represented The National University of Ireland constituency from 2011 to 2016. During his time in The Seanad, he served under the Oireachtas Health Committee and The British Irish Parliamentary Association and was the author of legislation which resulted in a ban on smoking in cars where children are present.

Ms Alicia Hayes, BL

Ms Alicia Hayes

Case Manager, Medical Protection Society

Alicia is a dual-qualified lawyer. She joined the Medical Protection Society, as a Legal Advisor based in the London office, in February 2019. She recently spent a year on secondment with the Irish Claims Team, before relocating back to her hometown of Limerick to take up her current role as Case Manager for the Ireland Team. Before joining MPS, Alicia worked with a leading Patient Safety Charity, and then as a Senior Lawyer at Capsticks Solicitors LLP in London, which is one of the leading Defendant clinical negligence law firms in the UK.

Alicia qualified as a barrister in Ireland in July 2006, having completed her law degree at UCC. She then trained and worked in Ireland (mainly on the South Western Circuit) for 7 years before moving to the UK in 2013. She was called to the Bar of England and Wales (Middle Temple) in November of the same year.

Alicia graduated with Distinction (First Class Honours) in a Masters (MA) in Medical Law & Ethics, from Kings College London (2014). She received the highest mark overall in her medical law class and her dissertation was chosen as an 'exemplar' of excellent work.

Alicia, as part of a scholarship conferred by the Bar Council of Ireland, spent three months working as a "visiting attorney" with the lawyers at the Duke University branch of the Innocence Project, in North Carolina. The Innocence Project works to exonerate wrongfully convicted people, mainly through the use of DNA evidence. Two men were exonerated during her time at the project, one of whom was on death row.

Having worked exclusively in healthcare law for the last 10 years, Alicia has significantexperience in all aspects of clinical negligence claims work, medical law, inquests and regulatorycases both in the UK and Ireland.

In her spare time Alicia likes to read, write and ski.

Ms Olya Scannell

Ms Olya Scannell

Consultant Ophthalmic Surgeon,
Royal Victoria Eye and Ear Hospital and CHO 7, Dublin

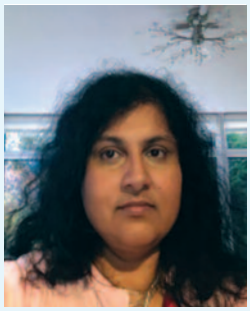
Ms Olya Scannell is currently a consultant ophthalmologist at the Royal Victoria Eye and Ear Hospital and Community Health Organisation 7 in South Dublin, where she leads the development of an integrated eye care service with a focus on paediatric ophthalmology and medical retina. She undertook subspecialist fellowship training in uveitis and medical retina at Manchester Royal Eye Hospital in 2019-2020. Ms. Scannell completed her training in ophthalmic surgery in Ireland and was awarded her fellowship of the Royal College of Surgeons in Ireland in 2020. She previously undertook postgraduate research in glaucoma at the Mater Misericordiae University Hospital and University College Dublin and was awarded a Doctor of Medicine degree in 2016. Ms. Scannell studied medicine as an undergraduate at University College Cork, where she graduated with honours in 2009.

Ms Deirdre Townley

Ms Deirdre Townley

Consultant Ophthalmic Surgeon, Galway University Hospital

Ms Deirdre Townley completed her ophthalmic surgery training on the Irish higher surgical training scheme. She subsequently completed a fellowship in Medical Retina and Uveitis in Moorfields Eye Hospital, London. Ms Townley was appointed to her Consultant position in University Hospital Galway in 2015, where she is also the Clinical Lead for the Hospital Eye Department. Ms Townley is the Irish delegate to the European Board of Ophthalmology.



Dr Soma Chakrabarti

Dr Soma Chakrabarti

Consultant Ophthalmologist Joint Clinical Director specialising in Uveitis and Diabetic eye disease: Greater Glasgow and Clyde

Dr Soma Chakrabarti is a Diabetic eye disease and uveitis specialist at Southern General Hospital in Glasgow. She is the Joint Clinical Director of the Ophthalmology department in the NHS Greater Glasgow and Clyde area which employs 40 Consultant Ophthalmologists, covering all major sub-specialties. Ophthalmology clinics are held on nine hospital sites, with ophthalmic surgery undertaken in seven hospitals.

Mr Tom Flynn

Mr Tom Flynn

Consultant Ophthalmic Surgeon, Bon Secours Hospital, Cork

Mr Tom Flynn is a Consultant Ophthalmologist at Bon Secours Hospital Cork, specialising in cornea, cataract and refractive surgery. A graduate of University College Cork, he trained in ophthalmology at Moorfields Eye Hospital London. In 2013 he joined the Consultant staff at Moorfields where he worked as a specialist in Cornea, Cataract and Refractive surgery before returning to Cork in 2019. In 2011 he was awarded a PhD by University College London for his research on the immunology of corneal transplantation. Other research interests have included injury prevention, allergic conjunctivitis, corneal imaging and outcomes of cataract surgery.

Ms Sarah Moran

Ms Sarah Moran

Consultant Ophthalmic Surgeon, Cork University Hospital/South Infirmary Victoria University Hospital, Cork

Ms Sarah Moran is a Consultant Ophthalmic Surgeon at Cork University Hospital/South Infirmary Victoria University Hospital, specialising in cataract and corneal conditions. Ms Moran qualified from University College Cork in 2006 with a First-Class Honours degree. She completed Higher Specialist Training in Ophthalmology in Ireland, and was awarded the Richard Steevens Scholarship in 2018. Following a year of subspecialist corneal training at the Hôpital Fondation Rothschild in Paris, she received her Certificate of Completion of Specialist Training (CCST) in 2019 from the Royal College of Surgeons Ireland. She returned to a consultant position in Cork,where she is developing the corneal service. Ms Moran also has a strong interest in clinical research, with numerous international publications.

Mr Barry Quill

Mr Barry Quill

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

Mr Barry Quill is a Consultant Ophthalmic Surgeon whose clinical areas of expertise include Cataract, Refractive, Glaucoma and Corneal Surgery. He completed his residency and specialist registrar training in 2015 through the Royal College of Surgeons, Ireland. He was awarded a fellowship in Refractive Laser and Cataract Surgery from the Mater Private Hospital, Dublin and awarded two subsequent fellowships from The Royal Perth Hospital, Australia gaining valuable experience in Cornea and Anterior segment surgery as well as Glaucoma.

He currently works as a consultant ophthalmic surgeon in the Royal Victoria Eye & Ear Hospital and Blackrock clinic. He also holds the position of Ophthalmic Director of the Eyebank at the Irish Blood Transfusion Services.

His main research interests are glaucoma, corneal transplantation and eye banking. He received his academic Doctorate from University College, Dublin (2010) for his full-time research in glaucoma eye disease. This body of work has resulted in international and national prizes, awards and publications, and he has lectured worldwide on his findings. He has authored multiple international peer reviewed publications and book chapters.

Ms Nikolina Budimlija

Consultant Ophthalmic Surgeon and Ocular Surface Specialist, Institute of Eye Surgery, Waterford

Ms Nikolina Budimlija

Ms Nikolina Budimlija graduated from the School of Medicine, University of Zagreb in 2005 and later gained a Masters in Health Management. She was a Fellow of the European Masters Program in Health Promotion. Nikolina trained in Ophthalmic surgery at the Clinical Hospital Centre, Sestre Milosrdnice Zagreb. She was additionally trained in Austria, Slovenia and Spain. Nikolina spent 4 years working as lead ophthalmic consultant at Health Centre in Zagreb until early 2018 when she started a position as a consultant in private practice in Bray, Co. Wicklow, Ireland. She joined Institute of Eye Surgery (IoES) in 2019 as Ocular Surface Specialist and Oculoplastic Surgeon. She is a member of Scientific Committee at Irish College of Ophthalmologists, Member of Public Awareness Committee at Tear Film & Ocular Surface Society (TFOS), European Dry Eye Society (EuDES), European Society of Cornea & Ocular Surface Disease Specialists (EuCornea), Croatian Ophthalmological Society and the European Society of Cataract & Refractive Surgeons (ESCRS). She has participated in numerous medical conferences worldwide.

Ms Eleanore O'Gorman

Occupational Therapist, Cork University Hospital & Irish Mixed Tag Rugby Squad

Ms Eleanore O'Gorman

Eleanore O'Gorman is an Occupational Therapist at Cork University Hospital and an accomplished Irish athlete. She is a member of the Irish Mixed Tag Rugby Team. The squad are currently preparing for the Tag World Cup 2023 which is taking place at the University of Limerick Stadium in August.

We are delighted to welcome Eleanore to the ICO Conference in Killarney, where she will share her experience of having keratitis and the treatment she received.

The ICO wish to thank the following industry partners for their support at this year's ICO Annual Conference

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ICO Annual Conference 2023

Book of Abstracts

PAPER SESSION

Monday – 3.30pm

The Annual Conference of the Irish College of Ophthalmologists: Examining over a Decade of Trends

Gull K[1], Farrell L[1], Kelly S[2], O'Brien C[2,3], O'Toole L[2,3].
[1]School of Medicine, University College Dublin,
[2]Irish College of Ophthalmologists, Dublin,
[3]Mater Misericordiae University Hospital, Dublin.

Objectives:
The annual conference of the Irish College of Ophthalmologists (ICO) is a key calendar event for ophthalmology research in Ireland. We investigated whether there were identifiable trends across various domains for the last twelve ICO meetings. Our objectives were to assess subspecialty and training centre representation, as well as the characteristics of the first author to include gender and stage of training.

Methods:
A retrospective analysis of paper and poster presentations from the ICO annual conference yearbooks was conducted. The representation of subspecialties, affiliated institutions and gender distribution were noted for both categories. For paper presentations, the author's career stage, full-text publication rates and impact factors were also determined.

Results:
A total of 306 paper presentations and 306 poster presentations were analysed. The subspecialty of retina had the highest representation within both sections. The overall mean publication rate was 38% (range 6-39%) with a mean journal impact factor of 2.02. No statistically significant differences in gender noted with regards to poster, paper or publications ($p<0.9$, $p< 0.1$, $p< 0.7$ respectively).

Conclusion:
This is the first review of all research contributions to the ICO conference. We found that there is a need to promote research in some underrepresented subspecialties and training centres. No significant gender bias was found. There is scope to improve the publication conversion rate; this would allow for greater dissemination of the research presented at the ICO meeting.

A Feasibility Study for the Classification of Diabetic Macular Oedema from Optical Coherence Tomography Scans using Deep Learning

Breathnach C[1], O'Keeffe D[1,2], Simpkin A[3], Hickey R[1], Harney F[1,4].
[1]School of Medicine, College of Medicine Nursing and Health Sciences, University of Galway, Galway,
[2]Department of Endocrinology, University Hospital Galway, Galway,
[3]School of Mathematical and Statistical Sciences, University of Galway, Galway,
[4]University Hospital Galway, Galway.

Objectives:
Diabetic Macular Oedema (DME) is a complication of poorly controlled Diabetes Mellitus and is reliably detected using optical coherence tomography (OCT). Deep learning algorithms can be used to detect retinal pathology, including DME, from OCT scans. The objective of this study was to test the feasibility of using such a deep learning algorithm in an Irish setting for the detection of DME.

Methods:
Anonymised OCT images were retrospectively obtained from 950 patients at University Hospital Galway. The images were taken at the foveal level and were graded by a consultant ophthalmologist to classify the level of DME present on a novel scale (Normal, DME not affecting the foveal contour and DME affecting the foveal contour). Other pathologies were excluded. A deep learning algorithm was validated using cross-validation, and then evaluated on an additional test dataset. The test set was graded by a second ophthalmologist for comparison.

Results:
In detecting the presence of DME, the algorithm achieved an average accuracy of 94.34% on cross-validation and an accuracy of 92.5% on the test dataset, compared to the first ophthalmologist. The algorithm detected DME with an accuracy of 87.9% accuracy compared to the second ophthalmologist. When detecting the DME class, the algorithm achieved an average accuracy of 89.3% on cross-validation and an accuracy of 86.6% on the test dataset compared to the first ophthalmologist. The algorithm detected the DME class with an 80.0% accuracy compared to the second ophthalmologist.

Conclusion:
This study suggests promising results for the use of deep learning in the detection of DME in an Irish population and this could have implications for screening programmes. Further data, an increased number of graders and model refinement may further increase the performance.

Maximizing Corneal Endothelial Integrity

Dallinga M[1,2], Ni Gabhan Dromgoole J[2], Murphy C[1,2].
[1]**Royal Victoria Eye and Ear Hospital, Dublin,**
[2]**Royal College of Surgeons, Dublin.**

Objectives:
Corneal endothelial cells form a tight barrier that regulates corneal homeostasis. Dysfunction leads to oedema, which causes vision loss and painful bullae. Current treatment consists of corneal transplantation, either partial or full thickness. Because of a donor shortage, only 1 donor is available for every 7 patients worldwide. We therefore need to find alternative treatment methods.

We sought to find an approach that improves corneal endothelial barrier function. Trio is a protein known to regulate the junctional protein VE-Cadherin and could thus play a role in junctional stability and barrier function in endothelial cells. The objective of this project is to study whether Trio can play a role in restoring the corneal endothelial barrier in patients with endothelial failure.

Methods:
The role of Trio in junctional morphology and barrier function was analyzed using silencing shRNA and addition of Trio protein elements. Cellular and junctional morphology was analyzed with immunohistochemical staining in vitro, in vascular endothelial cells, and in vivo, in zebrafish.

Corneal material of patients receiving a transplant was collected and immunohistochemical staining was performed to analyze the presence of Trio and the morphology of the cell-cell junctions.

Results:
Silencing of Trio reduced the barrier function and junctional linearity of cultured endothelial cells. Re-introduction of the Trio N-terminal rescued this phenotype and restored the barrier and junctions. Introduction of additional TrioN to cultured cells greatly enhanced endothelial barrier function and junctional stability. Additionally, introduction of TrioN induced actin remodeling in vascular endothelial cells resulting in increased cell size through spreading as well as a hexagonal shape that is normally only found in corneal endothelium.

Trio was confirmed to be present in corneal endothelial cells.

Conclusion:
Trio is capable of increasing endothelial barrier function, increasing endothelial junctional stability, increasing endothelial cell size and inducing a hexagonal shape. Since we have confirmed the presence of Trio in corneal endothelial cells, it is a promising candidate for future medical treatment of patients with corneal endothelial failure.

Analysis of Metformin's Effect on Human Glaucomatous Lamina Cribrosa Cells

Hurley D[1], Conwell B[2], Irnaten M[1], Millington-Ward S[3], Farrar G[3], Willoughby C[2], O'Brien C[1].
[1]Mater Misericordiae University Hospital, Dublin,
[2]Ulster University, Coleraine,
[3]Department of Genetics, Trinity College, Dublin.

Objectives:
The Lamina Cribrosa (LC) is a key site of retinal ganglion cell axonal injury in primary open angle glaucoma (POAG). Metformin has been used in fibrotic disease and cancer models, as well as being associated with reduced POAG incidence in a large cross-sectional study. In this study, we assess metformin's effect on glaucomatous LC cells by carrying out a systematic mitochondrial bioenergetic assessment and measuring markers of fibrosis and endoplasmic reticulum (ER) stress activity. In addition, we analyse a novel pathway involving MiRNA-26a and the oncogene HMGA1.

Methods:
Human LC cells from age matched normal (NLC) and glaucoma (GLC) donors were assessed using a Seahorse XFe96 Analyzer. GLC cells were treated with Metformin at different concentrations and a dose response curve was assessed. Three concentrations of metformin (0.1mM, 1.0mM and 5.0mM) and a MiRNA-26a mimic were then utilised to examine cell proliferation and apoptosis (BrdU staining), extracellular matrix (ECM) (Col1A1, α-SMA, and vitronectin), endoplasmic reticulum (ER) stress (CHOP) and HMGA1 gene (RT-PCR) and protein (western blotting) expression in NLC and GLC cells

Results:
GLC cells had significantly lower maximal oxygen consumption rate, spare respiratory capacity and ATP production. Treatment with 0.1mM metformin significantly improved maximal OCR and spare respiratory capacity in GLC. GLC cells had significantly higher levels of HMGA1, MiRNA-26a, CHOP and ECM markers. All metformin concentrations and MiRNA-26a mimic significantly raised MiRNA-26a and decreased HMGA1 and ECM markers. Both treatments had no substantial effect on CHOP.

Conclusion:
Our results indicate the potential therapeutic benefit of metformin use in glaucoma. This may be achieved through improved mitochondrial functioning and ECM remodelling. Furthermore, we show evidence of a potential pathway of action for metformin, through up-regulated MiRNA-26a and subsequently downregulated HMGA1.

Patterns of Neuronal and Central Visual Field Loss in Optic Neuritis at Outcome Identified by Machine Learning

Woods, B[1], Szanto D[2], Wang J[3], Elze T[4], Garvin M[3], Pasquale L[2], Kardon R[3], Branco J[2], Kupersmith M[2].
[1]Cork University Hospital, Cork,
[2]Icahn School of Medicine at Mount Sinai, New York,
[3]Department of Ophthalmology and Visual Sciences, The University of Iowa, Iowa,
[4]Harvard Ophthalmology AI Laboratory, Boston.

Objectives:
Archetypal analysis (AA), a method of unsupervised machine learning (ML), has recently been used to create a model that quantified patterns (archetypes) of visual field (VF) loss that can predict recovery and reveal residual VF deficits from eyes in the Optic Neuritis Treatment Trial (ONTT). We hypothesised that ML methods, when applied to the investigation of residual central VF deficits and macula retinal ganglion cell (RGC) thickness post an episode of ON, could reveal specific patterns of loss and enhance our understanding of the structure-function relationship in ON.

Methods:
AA was applied to 157 same-day pairings of 10-2 VFs and segmented optical coherence tomography (OCT) macula images collected from 88 eyes at least 90 days after acute ON attack, decomposing them into component VF and retinal thickness

archetypes (total weight = 100%). We correlated archetypes for total retinal thickness (TRT), inner retinal thickness (IRT), and macular ganglion cell-inner plexiform layer (GCIPL) thickness to ATs of visual field loss. A sub-analysis was also performed on VF and OCT patterns in eyes with a poorer visual outcome (MD>5 dB), training on 50 ON VFs and testing on 26 separate eyes.

Results:
AA identified seven VF loss patterns and 11 retinal thickness patterns for the three OCT models of all eyes. A total of 137 measurements (87%) had the normal VF AT as the dominant AT (weight ≥ 50%). Conversely, OCTs seldom decomposed predominantly into a single AT. We found GCIPL ATs best correlated with the significant VF metrics MD (r = .61) and the normal VF AT (r = .58). For eyes with poor vision (MD < -5 dB), a ten-AT-VF model shows three meaningful VF patterns corresponding to moderate diffuse vision loss (r = .79), major diffuse vision loss (r = .77), and central vision loss (r = .71), as well as strongly predicting MD (r = .77).

Conclusion:
AA is a quantitative method to measure change and outcome of ON VFs and OCTs. The vast majority of VFs post an episode of ON display complete recovery, as measured via 10:2 VF. Infrequently, focal losses within visual fields may be identified. While global reduction in GCL thickness is commonly observed, this does not correlate well with VF outcomes suggesting possible compensatory mechanisms. AA identifies and correlates patterns of retinal thickness loss and vision loss best when there is incomplete recovery of VF.

Ocular Surface MicroRNA Associated with Chronic Ocular Graft versus Host Disease

Greenan E[1,2,3], Connolly N[4], Passos V[5], Khan I[6,] Castellanos M[6], O'Neill F[7], McDonnell C[1], Das S[1], Vandenberghe E[8], Conneally E[8], Ní Gabhann-Dromgoole J[1], Murphy C[1,2,3].

[1]School of Pharmacy and Biomolecular Sciences, RCSI, University of Medicine and Health Sciences, Dublin,
[2]RCSI, University of Medicine and Health Sciences, Dublin,
[3]Royal Victoria Eye and Ear Hospital, Dublin,
[4]Department of Physiology & Medical Physics, RCSI, University of Medicine and Health Sciences, Dublin,
[5]Data Science Centre, RCSI, University of Medicine and Health Sciences, Dublin,
[6]Nottingham Arabidopsis Stock Centre, University of Nottingham, Nottingham,
[7]National Institute for Cellular Biotechnology, Dublin City University, Dublin,
[8]Department of Haematology, St. James's Hospital, Dublin.

Objectives:
Chronic ocular GvHD occurs in 30–60% of patients after stem cell transplantation. Its pathogenesis surmounts to a cycle of chronic inflammation and fibrosis, leading to dry eye that is often severe, and in cases refractive to treatment. There is no gold standard test nor distinct sign or symptom. Instead, a diagnosis is made through a set of criteria that place heavy reliance on clinical findings. This need for subspecialist input can delay diagnosis, treatment and lead to unsatisfactory outcomes and patient suffering.

The objective of this study was to identify microRNA associated with disease signature and severity in the conjunctival epithelial cells (CECs) of patients with chronic ocular GvHD. Through an exploration of their predicted gene targets this study sought to develop a deeper understanding of the epigenetic signaling pathways involved in disease as well as identifying urgently needed biomarkers of diagnostic and therapeutic potential.

Methods:
Consecutive patients with a diagnosis of chronic ocular GvHD as per the National Institute of Health were recruited along with healthy age and gender matched controls. CECs were collected from the ocular surface via impression cytology. MicroRNA were isolated and then analyzed via Affymetrix Genechip miRNA 3.0 microarray. MicroRNA with a fold change of > 2 or < −2 and an FDR p value of < 0.05 were retained for further analysis. A LASSO regression model was applied in order to identify microRNA associated with disease signature and severity (SAS v. 9.4). Computational predictive methods were then used to identify high confidence microRNA target interactions (MTIs) using R studio (R version 4.1.3).

Results:
Nine patients, five male (56%) four female (44%) with an average age of 38.6 yrs (±11.3) participated. Differentially expressed microRNAs were identified (n= 94, FDR < 0.05, fold change ± 2).

A panel of microRNAs associated with disease signature (n= 3) and 50 MTIs were identified. Of interest was the upregulation of HDAC4, an inflammatory pain mediator, NOTCH2 which is overexpressed in dry eye models and PDGFRA which is expressed in corneal injuries. In addition, SCARF1, which is needed for immunotolerance, PCDH1 needed for epithelial repair, NTS which is a regulator of pain and inflammation, and IHH which is needed for corneal healing were all downregulated.

An additional panel of microRNA were identified terms of disease severity (n= 3), along with 27 MTIs. Those MTIs of particular interest included CDH1, which is involved in epithelial cell differentiation, DDA1 whose overexpression is associated with the activation of NF-κB pathway and PFKFB3 whose elevated expression is associated with immune mediated inflammation and destruction.

Conclusion:
There is an urgent need for biomarkers in chronic ocular GvHD. The results from this study provide novel microRNA panels with potential diagnostic and therapeutic value, along providing an innovative perspective into the molecular mechanisms underpinning disease development and severity.

The Endoplasmic Reticulum Stress Response in Glaucoma Lamina Cribrosa Cells

Normile C[2], Irnaten M[2], Simpson D[3], Cappa O[3], Kholodenko B[4], Zhernovkov V[4], O'Brien C[1,2].
[1]**Mater Misericordiae University Hospital, Dublin,**
[2]**Clinical Research Centre, UCD School of Medicine, Mater Misericordiae Hospital, Dublin,**
[3]**The Wellcome – Wolfson Institute for Experimental Medicine, School of Medicine, Dentistry and Biomedical Sciences, Queen's University Belfast (QUB), Belfast,**
[4]**Systems Biology Ireland, UCD Conway Institute, Dublin.**

Objectives:
To analyse the role of Endoplasmic Reticulum (ER) Stress in glaucoma pathogenesis and investigate potential treatment options.

Methods:
Single cell RNA sequencing of lamina cribrosa (LC) cells from normal and glaucoma donors was performed in Queens University Belfast. At data analysis genes involved in the ER stress response (ATF4, CHOP, GRP78, GRP94, eIF2α) were identified as being upregulated in glaucoma cells. Further evaluation using traditional techniques such as PCR and Western blot confirmed this upregulation. Targeted treatments such as ISRIB, 4-PBA and 3i-1000 were applied to normal and glaucomatous LC cells and gene expression was measured.

Results:
Single cell RNA sequencing data analysis, PCR and Western blot analysis show an increase in expression of genes involved in the ER stress response. LC cells were treated with molecules that have been shown to dampen the ER stress response such as 4-PBA, ISRIB and novel molecule 3i-1000. These treatments were all shown to decrease levels of ER stress markers, and also decreased markers of fibrosis such as COL1A1, αSMA.

Conclusion:
The ER stress response has previously been shown to be activated in the trabecular meshwork of glaucoma patients. In our study we demonstrate that it is also activated in the LC, and we also identify three potential treatments which we have shown can dampen the ER stress response in the LC.

PAPER SESSION

Tuesday – 9.30am

Optic Nerve Head Perfusion and Optic Neuropathy in Carriers of Leber Hereditary Optic Neuropathy-Associated Mitochondrial Mutations

Quigley C, Stephenson K, Kenna P, Cassidy L.
Royal Victoria Eye and Ear Hospital, Dublin.

Objectives:
In Leber Hereditary Optic Neuropathy (LHON) the triggering event which manifests vision loss is not fully understood, as most carriers of 'pathogenic' mitochondrial mutations do not lose vision. We investigated LHON families for variation in optic nerve head retinal nerve fibre layer perfusion, which may have a role in the disease process.

Methods:
A group of LHON-affected and their asymptomatic maternal relatives underwent examination including testing of visual acuity, visual-evoked-potential, and optic nerve imaging including optical coherence tomography angiography (OCTA) of the peripapillary retinal nerve fibre layer (RNFL). A control normal sample was examined by OCTA also. The software imagej was used to derive VD, and statistical package 'R' to analyse data.

Results:
Of the study cohort of twelve LHON-affected patients and sixteen asymptomatic relatives OCTA measurement was possible in four LHON-affected patients (four males, median age 21, interquartile range (IQR) 17-31), and eleven asymptomatic carrier relatives (ten females, median age 56, IQR 45-63). Ten controls with normal eyes (seven females, median age 48, IQR 37-56) were also examined. The LHON-affected group had significantly reduced peripapillary VD, median 7.9% (IQR 7.1-10.6%, p=0.046). Overall, the LHON asymptomatic relatives had no significant change in peripapillary VD, median 13.7% (IQR 10-14.7%, p=0.166), though three eyes had VD which fell below the derived normal range at 6% each. In those eyes with reduced peripapillary VD, visual acuity was variable. In one asymptomatic carrier with normal VA but reduced VD, VEP was prolonged to 130 milliseconds.

Conclusion:
Overall, reduced peripapillary retinal nerve fibre layer VD was observed in those affected by LHON, but was not reduced in their asymptomatic relatives. The presence of reduced VD was associated with signs of optic neuropathy in asymptomatic relatives.

Uveal Melanoma in Ireland

Greene A[1], MacSwiney T[1], McGrath R[1], O'Neill V[1], Bailey C[1], Cunningham M[2], Crown J[3], O'Meara A[3], Kennedy S[4], Horgan N[1].
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[2]Dept. of Radiation Oncology, St Luke's Hospital, Dublin,
[3]Dept of Medical Oncology, St Vincent's University Hospital, Dublin,
[4]Dept of Pathology, Royal Victoria Eye and Ear Hospital, Dublin.

Objectives:
To report the clinical features and epidemiology of uveal melanoma in Ireland. To examine 10 year overall survival and distant metastases-free survival.

Methods:
All cases of newly diagnosed uveal melanoma in Ireland from June 2010 to December 2020 were analysed (n=520). Main outcome measures included patient demographics, clinical features, age-adjusted incidence, relative survival, overall survival, and distant metastases-free survival. Results were analysed using multivariate analysis on SPSS version 24™.

Results:
The mean patient age was 59.66 years. Tumour location was choroidal in 84% (including 11% juxtapapillary with location), ciliochoroidal in 11% and iridociliary in 5%. Initial treatment modalities included brachytherapy 57% (ruthenium-106 (70%) iodine-125 [30%]), enucleation (28%), and proton beam radiation (14%). The mean age-adjusted incidence of uveal melanoma in Ireland from 2010 to 2020 was 9.8 per million of the population. During COVID-19 disease was more advanced at presentation, however there was no increase in the interval from diagnosis to treatment. Common sites of metastasis included liver, lung and bone. Ten-year overall survival was 66.2%.

Conclusion:
Based on this data, the incidence of uveal melanoma in Ireland is high when compared with other reported incidence rates in Europe and worldwide. Survival rates were in keeping with other reported European survival rates.

Keratoconus Screening in Children with Down Syndrome

Power B[1], Malata D[1], Murphy C[1], Quill B[1], Molloy E[2], McGrane F[2], Power B[1].
[1]Royal Victoria Eye and Ear Hospital, Dublin,
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Objectives:
Assess the data gathered in our pilot screening programme for keratoconus in Down Syndrome (DS) and determine the optimum age for screening.

Methods:
We launched a pilot DS keratoconus screening programme in RVEEH in 2020 in conjunction with the National DS Clinic at Tallaght University Hospital. Children with DS were invited to the cornea clinic in RVEEH for assessment. We recorded medical history, risk factors, BCDVA and corneal topography for each individual. Treatment decisions were made by a cornea consultant. We compared this data to a control group of adults with DS who had previously been assessed in the clinic.

Results:
Twenty-two individuals were included in the screening group, complete topographic data was available in 19 patients, average age of 13.6 (9-18). 9 individuals were included in the control group with topographic data available in 8 patients, average age of 34.8 (21-48). The average K, Kmax and CCT in the screening and control groups were 46.6, 49.5, 470 and 55.7, 66.7, and 395 respectively. 5 of 44 eyes in the screening group were listed for intervention (all crosslinking) and 11 of 18 eyes in the control group (1 PKP, 2 EUA, 7 crosslinking).

Conclusion:
The link between keratoconus and DS is well documented. Early diagnosis and treatment are particularly important in this cohort. The optimum age to screen this group has not been established. This study found steep Ks, high levels of astigmatism and corneal thinning in children with DS. We believe the optimum age for this to be the early teens, to maximise the ability to undergo topography and to minimise disease progression. Our data shows, unsurprisingly, that younger screened patients have milder disease levels and a lower requirement for intervention than an older, non-screened control group.

Patient Reported Outcomes of Serum Eye Drop Therapy for Ocular Surface Disease at the Royal Victoria Eye and Ear Hospital

Smyth A[1], Hurley D[1], McSwiney T[1], Fabbian L[1], Quill B[1], Power B[1], Murphy C[1,2].
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Objectives:
Serum eye drops (SED) are an important treatment option for patients with severe or refractory ocular surface disease (OSD). SED are blood-derived drops, taken either from the patient being treated (Autologous) or from a voluntary donor (Allogeneic). OSD is a multifactorial group of disorders with varying pathogenesis which ultimately causes loss of homeostasis of the

natural tear film and ocular surface. This can lead to chronic inflammation, infection, scarring and vision loss (1). First line treatment for OSD includes lubricants, ointments with the addition of punctal plugs or punctal cautery. As proposed by the Dry Eye Workshop II (DEWS II) subcommittee, if these treatments are ineffective, SED are often considered (2). SED are believed to hold an advantage over traditional lubricants as they not only provide lubrication but contain other biochemical properties allowing them to mimic the natural tear film (3). The purpose of this study was to evaluate the patient cohort currently prescribed SED from the Royal Victoria Eye and Ear Hospital (RVEEH), Dublin. We also compared patient reported outcomes in those receiving Autologous SED versus Allogeneic SED.

Methods:
We retrospectively reviewed the charts of all patients prescribed SED in RVEEH. To assess patient reported outcomes, an anonymous Ocular Surface Disease Index (OSDI) 12-item questionnaire was sent to all patients currently using SED. OSDI scores were calculated pre and post the commencement of SED and the difference in scores was calculated.

Results:
Data was collected from 81 patients. Sixty-nine percent of patients were female, with an average age of 58 years. Fifty percent of patients using SED had a diagnosis of Sjogren's syndrome. The other 50% were diagnosed with dry eye disease of variable aetiology. Fifty patients were using allogeneic serum drops and 31 patients were using autologous serum drops. Forty-four patients responded to the OSDI questionnaire. Ninety-five percent of patients reported an improvement in symptoms post SED. Seventy-two percent of patients reported that SED allowed them to reduce the frequency of all drop usage overall. There was a statistically significant reduction in OSDI scores pre and post SED use in both the Autologous group (p=0.0001) and the Allogeneic group (p=0.0007). However, there was no significant difference in OSDI scores in patients using Autologous SED (pre: 69.8; post: 34.8) compared to Allogeneic SED (pre: 71.3; post: 48.9) (35.0 vs 22.4) (p=0.12).

Conclusion:
Both Autologous SED and Allogeneic SED were associated with significant improvements in patient quality of life with severe OSD. There was no statistically significant difference when comparing patient reported outcomes in the Allogeneic group vs the Autologous group. This study highlights the benefits of SED for the treatment of OSD.

Single Centre Real World Outcomes for Neovascular Age-Related Macular Degeneration of the Use of Faricimab in Poor Responders to Anti-Vascular Endothelial Growth Factor in the United Kingdom

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[1]**Bristol Eye Hospital, University Hospitals of Bristol and Weston, Bristol,**
[2]**Bristol Medical School, University of Bristol, Bristol.**

Objectives:
The purpose of this study is to investigate the duration of Faricimab (Vabysmo, Roche) treatment effect in neovascular age-related macular degeneration (nAMD) and determine if non- or poor-responders patients demonstrate a treatment response with longer treatment intervals with Faricimab in a real world setting.

Methods:
The purpose of this study is to investigate the duration of Faricimab treatment effect in neovascular age-related macular degeneration (nAMD) and determine if non- or poor-responders patients demonstrate a treatment response with longer treatment intervals with Faricimab in a real world setting.

Results:
Two hundred seventy eyes of 222 patients were examined. Mean age was 81.5 years old (SD 7.27) and 54% of our patients were women. Almost all our patients were on aflibercept prior to switching and 75% were on less than 6 weekly injections to control disease activity. Baseline VA and CST were 67.50 (±13.40) and 315.90um (±108.92) respectively. VA and CST after 1 injection was 67.57 (±12.39, p=0.94) and 270.90um (±90.86, p<0.000), after 2 injections it was 67.89 (±13.96, p=0.77) and 264.90um (±85.89, p<0.000). Intraretinal (IRF) and subretinal fluid (SRF) was seen initially in 33% and 76% of patients respectively. After 2 injections of Faricimab, resolution of IRF was seen in a third of patients (p<0.003) and in half of patients with SRF (p<0.000). No new haemorrhages seen. Out of the 689 injections given, ocular adverse event was seen in 2 patients. One patient (0.05%) was diagnosed with presumed infective endophthalmitis, and 1 patient (0.05%) had a rip in the retina pigment epithelium from a large pigment epithelium detachment.

Conclusion:
To date Faricimab has been shown to maintain visual acuity and improve anatomical parameters in our patient cohort. This is also seen in the TRUCKEE study. Significant improvement in CST and resolution of retinal fluid were noted Thus far the safety of Faricimab is consistent with rate reported in the TENAYA and LUCERNE studies. We will continue to monitor the effectiveness and safety of Faricimab in our patient cohort.

Drive-Through IOP during the SARS-Cov-2 Pandemic: 18 Month Outcomes

Doolan E, Curtin K, Doyle A.
Royal Victoria Eye and Ear Hospital, Dublin.

Objectives:
1. To describe the establishment of a drive-through intraocular pressure (IOP) clinic, during the SARS-CoV-2 pandemic.
2. To follow up attendees at subsequent visits and document visual field progression and changes in management.
3. To compare these outcomes to those of attendees at the virtual OPD pre-pandemic and to determine whether attendance at a drive through clinic increased the chance of a negative outcome.

Methods:
Suitable patients were invited to attend the drive-through clinic where their IOP was measured in their cars with an iCare tonometer. The results were then reviewed by ophthalmologists via electronic medical record (EMR), and a decision made about appropriate follow-up. We collected information on the patients' diagnoses, IOP and treatment prior to the drive-through visit. We documented IOP at the drive-through visit, as well as Goldmann IOP(GAT), presence of visual field progression and any changes in management at their follow-up OPD visit. Outcomes were compared to those of a typical year of attendance at the virtual clinic pre-pandemic.

Results:
523 attended the drive-through clinic over one year from August 2020 - July 2021. 454 (87%) of these have since attended for review at RVEEH. 330 (73%) of those who have attended have up-to-date visual field data. Of those with visual field data; 280 (85%) have stable HVF and 50 (15%) have HVF progression. Of 454 who have attended follow-up: 366 had no change in management, 58 had a change in topical treatment, 20 had laser (14 SLT, 4 cyclodiode, 2 PI) and 10 had surgical intervention (4 trabeculectomy, 5 phaco for angle closure, 1 phaco + istent). Results of final comparison to a pre Covid year of attendance at glaucoma assessment clinic are pending.

Conclusion:
The drive-through IOP clinic was a safe alternative to hospital attendance during the pandemic. There has been a low rate of visual field progression and need for surgical intervention in attendees to date. Monitoring of stable patients' IOPs with iCare instead of GAT may be suitable in the virtual clinic setting going forward.

Post-Enucleation Outcomes of Patients with Uveal Melanoma

Elshelmani H, Quigley C, Kelly D, Punic G, Byrne A, McCloskey C, O'Neill V, Kennedy S, Crown J, Horgan N.
Royal Victoria Eye and Ear Hospital, Dublin.

Objectives:
To evaluate the metastasis/disease-free survival in patient who underwent enucleation surgery for uveal melanoma.

Methods:
Retrospective chart review of all patients who underwent enucleation surgery for uveal melanoma at the Royal Victoria Eye and Ear Hospital (RVEEH) ocular oncology service between 2010 and 2015. The metastasis/disease-free survival and overall survival were assessed. Correlation of demographic details (age, gender and smoking status) and tumour details (size, histology, BAP 1 status and chromosome 3 status) with survival were evaluated.

Results:
Of 74 enucleated UMs (48 male, 26 female) the number of Metastasis Free Days (MFD) for each patient was calculated. Mean age at diagnosis was 62 yrs. Male patients had longer metastasis-free-survival (p=0.0351) than female patients post-enucleation. Smoking status did not show any association with metastasis-free-survival in this cohort (p value = 0.37). Neither did age at the time of enucleation correlate with metastasis-free-survival.

Conclusion:
Female patents represented one-third of this patient cohort and had significantly shorter metastasis-free survival compared to the male patients. Underlying reasons for this require further evaluation.

PAPER SESSION

Wednesday – 10.00am

Cataract Surgery Outcomes in Uveitis Patients at the Royal Victoria Eye and Ear Hospital, Dublin

Powell S[1], Murphy C[2].
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Objectives:
The aim of this study was to analyse cataract surgery outcomes in uveitis patients at a single centre, the Royal Victoria Eye and Ear Hospital (RVEEH) over a five-year period.

Methods:
A retrospective review of electronic patient medical records using the in-house databases 'Medisight' and 'Docman' of patients diagnosed with uveitis who underwent cataract surgery between January 2018 and January 2023 in RVEEH was performed. Patient data was analysed pre-operatively, intraoperatively and up to three months post-operatively.

Results:
Fifty-two eyes of 41 patients were included in this study. The most common type of uveitis was posterior uveitis, which accounted for 63% of patients. Twenty percent of patients were taking systemic immunosuppressive therapy and a course of oral steroids was prescribed for 70% of patients prior to surgery. Thirty-eight percent of patients received an intravitreal Ozurdex® implant pre-operatively and 15% of patients received an intravitreal Iluvien injection. Fifteen percent of patients received a combination of Ozurdex® and Iluvien injections before cataract surgery. Forty-five percent of patients received intravitreal methylprednisolone (IVMP) perioperatively, 50% received subconjunctival dexamethasone intraoperatively and 19% received both IVMP and subconjunctival dexamethasone. Posterior synechiae were noted in 25% of patients, 26% of patients required iris hooks, and a dye assist (Visionblue) was utilized in 10% of cases. No intraoperative complications occurred. The most common intraocular lens implanted was the ZEISS CT Asphina lens (58%), followed by the Alcon Clareon®IOL (31%). Post operatively, 73% of patients were prescribed a tapering course of oral steroids, 21% were commenced on a tapering topical steroid regime starting with one hourly prednisolone forte drops, and 79% were prescribed two-hourly prednisolone forte drops. Three months following cataract extraction, 90% of patients demonstrated an objective improvement in visual acuity, and 64% of patients had visual acuities of 6/12 or better. The most common post-operative complication reported was cystoid macular oedema (CMO), occurring in 17% of patients.

Conclusion:
Cataract surgery in uveitis patients may pose a clinical challenge to ophthalmologists, and often requires intensive pre-operative, peri-operative and post-operative care. Uveitis patients are more likely to develop post-operative complications such as CMO and post-operative inflammation. In this study, visual acuity improved in 90% of uveitis patients following cataract surgery.

Ocular Toxicity Secondary to Hydroxychloroquine: Prevalence in an Irish Patient Cohort

Huang J[1,2], Horgan N[1,2].
[1]St Vincent's University Hospital, Dublin,
[2]Research Foundation, Royal Victoria Eye and Ear Hospital, Dublin.

Objectives:
1. To evaluate the prevalence of hydroxychloroquine retinopathy in Ireland according to Royal College of Ophthalmologists guidelines.
1. To further compare with the data obtained in the UK to see if there's any significant difference.

Methods:
This was a cross-sectional observational study of 60 patients recruited in collaboration with the Rheumatology and Dermatology departments at St. Vincent's University Hospital, Dublin, Ireland, between April 2019 and February 2020. Patients already on hydroxychloroquine medication at various dosages, for various reasons, for at least five years were recruited in this study. Ophthalmic examinations were carried out based on the Royal College of Ophthalmologists' clinical guidelines in 2018 for hydroxychloroquine screening. Visual acuity measurements using the log MAR chart, colour vision testing with Ishihara plates, 10-2 white on white perimetry, SD-OCT, colour fundal photo and fundus autofluorescence were undertaken for each patient. Multifocal electroretinography was requested only for those patients who had suspicious visual field defects, despite having normal OCT and FAF. Additionally, information such as gender, ethnicity, HCQ dosage and treatment duration, past and concurrent medical and medication history, and past ophthalmic history were recorded for every participant.

Results:
Overall, clinical examination, colour fundus photography, SD-OCT, fundus autofluorescence, visual field testing (10-2 white on white perimetry) and multifocal ERG did not show any signs of hydroxychloroquine retinopathy in any of this cohort of 60 patients. The prevalence of hydroxychloroquine retinopathy in this patient group was zero.

Conclusion:
The prevalence of retinopathy secondary to people who have been on hydroxychloroquine for five years or more among the Irish cohort was zero. This is in contrast to 7.5% reported by the American Association of Ophthalmology and also 1.6% reported by the Royal College of Ophthalmologists.

Intra-Operative En-Face Frozen Section for Margin Control during Periocular Basal Cell Carcinoma Excision

McCabe G, Mulcahy T, Fulcher T.
Mater Misericordiae University Hospital, Dublin.

Objectives:
To report the margin control process and rate of recurrence of periocular basal cell carcinomas (BCCs) managed by en-face frozen section-controlled (FSC) excision with 3-year follow-up.

Methods:
A retrospective analysis of all histopathologically proven cases of periocular BCC who underwent surgical excision by intra-operative en-face frozen section from 2015 to 2019 was performed. Patient demographics, histological subtypes, tumour location and size, number of excisions required to achieve margin control by frozen section, permanent paraffin section result, concordance between frozen section and final histology, and recurrence rates were reviewed. Patients with less than 3-year follow-up were offered a virtual appointment to determine possible recurrence.

Results:
A total of 87 BCC excisions from 85 patients were reviewed. The mean age was 73 years (range 41-92) and 52% (44/85) were men. The mean tumour diameter was 7.8mm (range 3-25mm). The most common location and histological subtype was the

lower lid and nodular BCC, respectively (47% and 83% of cases). 98% (85/87) were considered primary BCC (pBCC) and 2% (2/87) was excision of a recurrent BCC (rBCC).

Tumours were excised with approximately 2mm macroscopic clear clinical margins and sent to histology for intra-operative en-face frozen section. The patient waited in recovery while samples were analysed. Results were obtained verbally by a phone call to theatre from the pathologist.

Of day of surgery, 94% (82/87) of excisions achieved negative frozen section margins on the day of surgery, 90% (78/87) by 1 excision, and 4% (4/87) by 2 excisions. 6% (5/87) were left positive based on a clinical decision between the consultant, pathologist and the patient on the day of surgery. Of the 5 lesions left positive based on the frozen section, 1 was negative on final histology, i.e. 1% false positive. Of the 82 lesions determined negative by frozen section, 2 were positive on final histology, i.e. 2.3% false negative. On review of all final histopathological reports, 93% (81/87) of tumours were reported as fully excised.

17% (15/87) of BCCs are excluded from recurrence analysis due to less than 3-year follow-up available. This is due to death or loss to follow-up. The duration of final follow-up for the remainder of patients 83% (72/87) is 4.3 years (minimum 3years). Recurrence rate of pBCCs is 0%. There was 1 recurrence of a rBCC. This gives an overall recurrence rate during this time is 1.4% (1/72). The 1 cases of suspected recurrence, was in a patient with Gorlins syndrome where lesion was incompletely excised, subtype was morphaeform and patient was deceased 1 year later of unrelated causes. Of the remainder who had positive margins on final histology (n=4), there have been no clinical recurrence on close observation over 4.5 years (range 3-5.6). Extending the follow-up period with virtual appointments did not yield any additional recurrences.

Conclusion:
Periocular BCC can be managed effectively by en-face frozen section excision, with a high cure rate and low recurrence rate. Advantages of en-face excision include same-day excision and reconstruction and reduced theatre time. This is comparable to alternative excision techniques such as Moh's micrographic surgery which has limited availability in Ireland. Primary nodular BCCs with clear margins can be considered for earlier discharge with advice to self-monitor.

Outcomes of Low-Risk versus High-Risk Full Thickness and Posterior Lamellar Keratoplasty

Hegazy E[1], Hjortdal J[2], Griffin M[3], Armitage W[4], Pleyer U[5], Tole D[4], Vabres B[6], Murphy C[1,7].
[1]Royal Victoria Eye and Ear Hospital, Dublin,
[2]Aarhus University Hospital, Aarhus,
[3]Regenerative Medicine Institute (REMEDI) at CÚRAM SFI Centre for Research in Medical Devices, School of Medicine, National University of Ireland Galway, Galway,
[4]Translational Health Sciences, University of Bristol, Bristol,
[5]Charité University Hospital, Berlin,
[6]Centre Hospitalier Universitaire de Nantes, Nantes,
[7]Royal College of Surgeons in Ireland, Dublin.

Objectives:
The primary objective of this study was to investigate which clinical variables are most commonly associated with acute rejection (AR) in low-risk and high-risk full thickness (FT) and posterior lamellar (PL) keratoplasty. The secondary objectives were to investigate the corneal transplant (CT) failure rate post-AR and which clinical variables were associated with an increased risk of CT failure.

Methods:
Patients undergoing full thickness and posterior lamellar keratoplasty were recruited from 5 leading clinical centres in Europe including Ireland, United Kingdom, Denmark, France and Germany as part of the VISICORT study. Clinical examination and follow up visits were performed before the surgery, at the time of surgery and again at 6-months, 12 months, 24 months and 36 months after surgery. Data collection included pre-operative variables, surgical variables and status of the eye at each follow up visit.

Results:
Corneal neovascularisation and repeat transplantation were found to be associated with rejection in the FT CT group. Similarly, a pre-operative diagnosis of regrafts also affected the outcome in the DSAEK group along with an epithelial defect at follow up visits. In the DMEK group, the most common risk factor present for rejection was cessation of topical steroids or initiation of a low dose topical steroid regime post-surgery. The most common clinical variable associated with failure in both FT and DSAEK groups was a diagnosis of regraft.

Conclusion:
This study confirmed well established clinical variables such as regraft and corneal neovascularisation. We also identified early cessation of topical steroids, a widespread clinical practice, as risk factor for posterior lamellar keratoplasty. A much longer taper of topical steroids is required to reduce the risk of graft rejection. Further work is required to identify biomarkers as an adjunct to clinical variables to recognise high risk patients for graft rejection and failure.

Abnormal Red Reflex Referrals: A Two-year Retrospective Cohort Study of Referrals to a Tertiary Paediatric Ophthalmology Department

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[2]Mater Misericordiae University Hospital, Dublin,
[3]Manchester Royal Eye Hospital, Manchester.

Objectives:
The aim of our retrospective cohort study was to determine the volume and outcome of referrals with an abnormal red reflex performed as part of national screening guidelines by non-ophthalmologists to a tertiary paediatric ophthalmology department. By providing real-world data from a country in which the RRT forms part of national guidelines we aim to inform the debate regarding its utility as a screening tool by non-ophthalmologists.

Methods:
A retrospective review of referral letters over a two-year period to a tertiary paediatric ophthalmology department from January 2019 to December 2020 was performed for case identification. Inclusion criteria were the mention of any abnormal finding on assessment for a red reflex and a patient age of less than 90 days. Exclusion criteria were the presence of gross globe abnormalities or a referral from an ophthalmologist. Referrer type (GP, paediatrician, neonatologist), described abnormality, laterality, and risk factors referenced in the national guidelines (first-degree relative with congenital cataracts, prematurity, trisomy 21 and maternal TORCH infection) were recorded.

Results:
We identified 70 patients 90 days or younger who were referred following the detection of an abnormal red reflex during the two-year study period. Two patients were excluded based on the presence of gross globe abnormalities and one as the referral was from an ophthalmologist. Of the 67 patients in the cohort, 33 (49.52%) were referred by a neonatologist, 32 (49.25%) by a general practitioner (GP), and two (2.99%) by a paediatrician. The nature of the reported abnormality was an absent red reflex in 46 (68.66%) cases, leukocoria in 7 (10.45%), pale reflex in 5 (7.46 %), and an asymmetric reflex in one (1.49%). The remaining 8 (11.94%) were described as abnormal without an additional differentiator. In 54 (80.60%) cases the abnormality was bilateral, in 13 (19.40%) the abnormality was unilateral. Two patients (2.99%) did not attend for specialist assessment despite being offered multiple appointments. Of the 65 (65/67; 97.10%) patients who attended, 4 (4/65; 6.15%) had ocular pathology. An additional two patients had anisometropia but an otherwise normal assessment. Of those with ocular pathology, two patients had vitreous haemorrhage (2/4; 50%), and one (1/4; 25%) each had congenital cataract, and strabismus. There were no cases of retinoblastoma. No association between the presence of ocular pathology and the nature of the reflex abnormality, laterality, referrer type or risk factors referenced in national guidelines was seen following linear regression analysis.

Conclusion:
1 in 16 patients referred following the detection of an isolated abnormal RRT by a non-ophthalmologist in line with national guidelines had ocular pathology. 1 in 65 patients referred had congenital cataract. Changes to current training practice and an outline of the correct technique in national guidelines may help reduce the false positivity rate of the RRT. The development of a referral pathway which utilises the Integrated Eye Care Team (IECT) framework to provide specialist ophthalmic assessment in a community setting may be of benefit.

1 Year Outcomes of Paul Tube Glaucoma Implants in the Mater Misericordiae University Hospital

Brennan I, Dervan E.
Mater Misericordiae University Hospital, Dublin.

Objectives:
To evaluate the early outcomes of PAUL tubes implanted in the Mater Misericordiae University Hospital in reducing IOP along with the number of IOP-lowering medications used. Outcomes will be compared to existing data in the literature.

Methods:
This study is a retrospective analysis of patients who underwent PAUL tube implantation between June 2021 to March 2023 in the Mater Misericordiae University Hospital. Patient data including demographics, preoperative IOP, number of medications, and surgical details were collected. Postoperative data including IOP, medications used, additional procedures performed, and complications were recorded at 1 day, 1 week, 1 month, 3 months, 6 months and 12 months.

Results:
Over the study period, a total of 35 PAUL tubes were implanted. The results revealed a sustained decrease in IOP up to one year post-surgery. The mean number of medications required to maintain target IOP levels of ≤18mmHg also demonstrated a significant and sustained reduction up to one year post-surgery. This audit represents a continuation of previously presented findings at the ICO winter meeting, with the addition of further data at 6 months and 1 year, highlighting the efficacy of PAUL tube implantation in achieving effective IOP control and reducing medication burden.

Conclusion:
PAUL tube implantation appears to be an effective surgical option in reducing IOP and the number of medications used in advanced glaucoma patients in the Mater.

CONFERENCE POSTERS

Characterization of Optic Nerve Swelling with Oral Fluorescein Angiogragraphy and Ultra Widefield Retinal Imaging

Brady R, Kaza H, Jain N, Muthusamy B.
Paediatric Ophthalmology, Cambridge University Hospitals NHS Foundation Trust, Cambridge.

Objectives:
Optic nerve (ON) pathologies can present a diagnostic challenge in paediatric populations. Fundus fluorescein angiography (FFA) is a good diagnostic tool but can be difficult in children given the intravenous administration. Oral FFA (oFFF) is a less invasive alternative with superior imaging using an ultrawide field (UWF) retinal camera. This review aimed to demonstrate the safety profile of established oFFA protocol, characterise the ON pathology and compare the diagnostic accuracy of specialist clinicians versus trainee ophthalmologists in interpreting oFFA studies.

Methods:
A retrospective review was conducted of paediatric patients undergoing optic nerve evaluation using oFFA with images taken at 15min, 30 min, and 45 minute timepoints between 2019 and 2022. Four cardinal oFFA characteristics were identified: Normal nerve appearance, Papilloedema, ON head drusen and, uveitic papillitis. Test sensitivity and specificity was determined by a survey of attending and resident ophthalmologists, from across the East of England, who completed a blinded interpretation of 15 oFFA images with one of four diagnoses. Graphpad prism was used as statistical software for the study.
Results: oFFA series from 28 eyes (12 children) were identified, age ranging from 7-15 years. Our protocol produced good quality imaging while generating 0% adverse side-effects. User survey reveal excellent sensitivity and specificity in distinguishing normal from abnormal ON for both attendings and trainee ophthalmologists. Qualitative and quantitative feedback supported the task as a useful exercise.

Conclusion:
oFFA with UWF imaging are a safe and effective imaging adjunct in diagnostically challenging ON pathology.

Retrospective Analysis of Presenting Features and Visual Outcomes for Paediatric Patients Diagnosed with Idiopathic Intracranial Hypertension in a Single British Centre

Brady R[1], Pearce F[1], Pang A[2], O'Sullivan C[1], Harijan P[3], Krishnakumar D[3], Muthusamy B[1].
[1]**Paediatric Ophthalmology, Cambridge University Hospitals NHS Foundation Trust, Cambridge,**
[2]**Tan Tock Seng Hospital, National Healthcare Group Eye Institute, Singapore,**
[3]**Paediatric Neurology, Department of Paediatrics, Cambridge University Hospitals NHS Foundation Trust, Hills Road, Cambridge.**

Objectives:
This dataset reviews the demographics, presenting features, treatment, and visual outcomes in a cohort attending a single British tertiary centre of children diagnosed with Idiopathic Intracranial Hypertension (IIH) (28)

Methods:
A retrospective review off all IIH cases attending from 2010 to 2021, fulfilling the Freidman criteria and aged 4 to 16 years were included. (24)

Results:
62 Children met the inclusion criteria. Mean age was 12.5years (range 5-16 years) and 71% were female. Presenting symptom of headache occurred in 93.5% and 25% described visual obscurations. Papilloedema was found in 96.1% represented by grades 5 (4.1%), 4 (20.8%), 3 (22.9%), 2 (31.1%), and grade 1 (14.5%). Visual acuity was 6/9 or better in 88% of children at presentation. Visual field changes were found in 54% at presentation and recovered in 56% of these. Colour vision was affected in 29% and recovered completely in 82% of these with treatment. Treatment included combinations of acetazolamide 75.4% and/or topiramate 38.5%. One child required as emergency shunt. Significantly, children under 12 years old had a mean BMI of 25+/-8% (n=12) while those >12 had 28+/-5% (n=36). Graphpad prism was used for statistical analysis. (111)

Conclusion:
This cohort has a majority presenting with headaches and papilloedema with the visual field changes being the commonest visual deficit. They demonstrate recovery of colour vision with treatment but 46% with visual field defects were found to have persistent losses highlighting the time critical nature of diagnosis and treatment. The contrasting profile in BMI between children > or < 12 years of age suggests a possible difference in underlying pathology in these groups. (73)

Effectiveness and Efficiency of Nurse-Led Glaucoma Clinics: A Retrospective Service Evaluation at Beaumont Hospital

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Objectives:
To assess the effectiveness of nurse-led glaucoma clinics at Beaumont Hospital over a 4-year period from 2015-2019. This evaluation aims to analyse patient outcomes, patient satisfaction, and resource utilization in the nurse-led clinics compared to consultant-led clinics.

Methods:
This evaluation is a retrospective analysis of patients who attended nurse-led and consultant-led glaucoma clinics at Beaumont Hospital between 2015 and 2019. Patient demographics, clinical data, and appointment details were collected from electronic records. Patient satisfaction surveys were conducted to assess patient experience. Resource utilisation data were also collected and analysed.

Results:
Patient outcomes, including intraocular pressure, visual field testing, and medication changes, were similar between nurse-led and consultant-led clinics. Patient satisfaction surveys indicated high levels of satisfaction with the nurse-led clinics. Resource utilisation data demonstrated that the nurse-led clinics were more efficient in terms of appointment duration and resource utilisation.

Conclusion:
Nurse-led glaucoma clinics at Beaumont Hospital are an effective and efficient in the management of glaucoma patients. The results of this service evaluation suggest that nurse-led clinics can provide high-quality care to patients while optimising resource utilisation.

Mini-DSAEK in Macro-Corneal Perforations: Our Experience

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Objectives:
To present a short video of the tectonic mini-DSAEK technique in a case of macro-corneal perforation and to discuss our experience with this technique in other cases.

Methods:
This mini-DSAEK technique was first described in publications by Bruce Allan and his team in 2021. We highlight the benefits of this technique in certain patients where a tectonic full-thickness corneal graft would have a higher risk of rejection. We identify the benefits and challenges with this technique. We present a short video of one case and discuss the outcomes of similar cases.

Results:
We present our experience of using this new surgical technique in a number of cases.

Conclusion:
Mini-DSAEK is a useful surgical option in certain cases of corneal macro-perforation.

A Treatment Dilemma in a Case of Adult Orbital Alveolar Rhabdomyoscarcoma

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Objectives:
Orbital rhabdomyosarcoma (RMS) is an aggressive malignancy. Sarcoma's are a malignancy originating from soft tissue, making up less than 1% of all adult malignancies and RMS subtype accounting for 3% of adult soft-tissue sarcomas. Orbital RMS, although unusual, most commonly present in childhood and therefore; incidence of orbital RMS in the adult population are extremely rare (four to seven cases per million). Herein we present a case of an aggressive orbital rhabdomyosarcoma in an adult patient.

Methods:
A retrospective medical records analysis was carried out and the patients clinical details were collected.

Results:
A 61 year-old gentleman was referred for urgent ophthalmology opinion, reporting a 1 month history of proptosis and diplopia. On examination, there was obvious right eye proptosis with associated restriction in extra-ocular movements, most notably on downgaze. Ocular exam was otherwise unremarkable. There was no evidence of metastatic disease on PET scans. CT imaging confirmed a 2.6cm mass in the inferomedial right orbit, with inferior and medial rectii involvement and extraconal extension, encasing the orbital portion of the optic nerve. He underwent a transconjunctival biopsy of the right orbital mass which confirmed an alveolar rhabdomyosarcoma, FOXO1 translocation positive. He was treated with adjuvant chemoradiotherapy, as guided by tumour staging and initially, a reduction in mass size was demonstrated on serial imaging. A year following from initial presentation, After initial success there is aggressive recurrence of mass and orbital exenteration is now required.

Conclusion:
RMS is a highly aggressive malignancy that should be considered early in the diagnostic process for a rapidly progressive orbital mass. Alveolar cell type has the worst prognosis of all identified cell types, with a reported 5-year survival rate of 74%. Eye-preserving treatment with chemoradiotherapy, with surgical debulking often performed in conjunction, remains the

first-line treatment of these masses. Alveolar histology alone is considered a high-risk factor for recurrence of disease and poor outcomes post-recurrence. FOXO1 fusion positivity, as defined on molecular genetic testing, has further been isolated as a poor prognostic indicator, with survival rates based on FOXO1 status (in RMS) alone reported at 65%. 1/3 of patients diagnosed with RMS will experience a recurrence of disease, however following exenteration, reported survival rates improve to 90%. This case highlights the interesting question: should orbit exenteration be performed earlier in cases of primary orbital rhabdomyosarcoma where both histology and genetic analysis confirm a likelihood high-risk?

Mechanosensitive Calcium-Ion Channel Piezo1 in Glaucoma Lamina Cribrosa Fibrosis

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Objectives:
Fibrosis is the common end point of chronic inflammatory conditions and involves the accumulation of extra-cellular matrix (ECM) proteins. In glaucoma, a common site for this is the lamina cribrosa of the optic nerve head (ONH). LC Fibroblast cells have been demonstrated to play an integral role in the profibrotic ECM remodelling in glaucoma. Piezo1 is a calcium-sensitive mechanosensitive ion channel, which has been demonstrated to be over-activated in a variety of systemic fibroproliferative diseases, including ocular, lung, renal and cardiac tissue. Our aim is to investigate the role of Piezo1 in the fibrotic gene activation in glaucomatous lamina cribrosa cells.

Methods:
Human LC cells, obtained from age-matched "normal" and glaucomatous donors, were cultured from passage 4 and 9. Cells were grown on different substrate stiffness, 12kPa (reflecting normal physiological LC stiffness) and 100kPa (representing the "stiff" Glaucomatous LC environment). Piezo1 gene transcription levels were measured using quantitative real-time RT-PCR. Results: The results showed there was an increased expression of Piezo1 in normal cells cultured on 100 kPa substrate stiffness, reflecting glaucomatous conditions. This result was confirmed where significant upregulation of Piezo1 was found in cultured glaucomatous LC cells.

Conclusion:
Elevated expression levels of Piezo1 were found in normal LC cells cultured in stiff conditions, and in glaucomatous LC cells. We aim to further delineate the role of Piezo1 and its downstream effects in the fibrotic pathway in glaucomatous LC cells. From this, a possible alternative therapeutic target for the definitive treatment of glaucoma may be revealed.

Retrospective Study Comparing Response to Treatment among Neovascular Age-Related Macular Degeneration Patients Deemed Non-Responsive to Bevacizumab and Changed to Aflibercept or Ranibizumab

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St Vincent's University Hospital, Dublin.

Objectives:
There is a paucity of evidence examining a change in intravitreal anti-VEGF treatment after a suboptimal response. Retrospective studies suggest that switching treatment may provide a benefit in terms of anatomical improvements and treatment interval, with uncertainty regarding the visual acuity outcome. Bevacizumab is a first line treatment in many hospitals in Ireland, and our objective is to retrospectively examine the outcomes of the specific treatment change from bevacizumab to ranibizumab or aflibercept among refractory nAMD patients.

The primary aim of this study is to compare BCVA and central foveal thickness among nAMD patients deemed non-responders to bevacizumab and changed to aflibercept or ranibizumab. Secondary aims include:

- Time interval from diagnosis to a change in treatment
- Clinical documentation of macula fluid status i.e., 'dry/inactive' or 'wet/active' pre and post change in treatment
- Documented reason for a change in treatment i.e., what defined the patient being non-responsive
- Total number of intravitreal injections given prior to switching treatment
- The interval and number of injections at the time of treatment switch and the maximum interval of injections extended to pre and post switch of drug

Methods:
We carried out a retrospective chart and OCT review at St. Vincent's University Hospital among patients with nAMD deemed refractory to treatment with bevacizumab and changed to ranibizumab or aflibercept. Exclusion criteria: patients with a diagnosis other than nAMD, patients treated with ranibizumab or aflibercept prior to a change in treatment and patients who were previously treated outside of our hospital. Inclusion criteria: patients with nAMD deemed non-responders to bevacizumab and changed to aflibercept or ranibizumab during the period September 2019 to September 2022. Data recorded included best corrected visual acuity (BCVA), macula fluid status, time interval from diagnosis to a change in treatment, reason for a change in treatment, total number of intravitreal injections given prior to switching treatment, the interval and number of injections at that interval at the time of treatment change and the maximum interval of injections extended to pre and post change in treatment.

Results:
Data was collected on 40 patients. All patients were commenced on bevacizumab initially, after being deemed non responders, 23 patients were changed to aflibercept and 17 to ranibizumab. The mean number of intravitreal injections prior to switching was 10.2. The mean time interval from diagnosis to a change in treatment was 1.4 years.
Further results pending.

Conclusion:
Preliminary results suggest that changing from bevacizumab to ranibizumab or aflibercept may provide an anatomical benefit.

VEXAS: A Recently Reported Haemato-Immune Disease Presenting to an Ophthalmic Emergency Department

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Objectives:
We report a case of a 69-year-old male presenting to eye casualty exhibiting clinical features of orbital apex syndrome, with a two year history of undiagnosed atypical systemic inflammatory symptoms, papular rash and recurrent fevers.

VEXAS syndrome (vacuoles, E1 enzyme, X-linked, autoinflammatory, somatic), first reported in 2020 is the result of an acquired somatic mutation affecting the X-linked gene UBA1, responsible for ubiquitylation. VEXAS is characterised by vacuoles in myeloid and erythroid precursors, autoinflammatory features and almost exclusive male predominance. Ocular and orbital involvement have been described in VEXAS syndrome, with orbital features poorly defined. Treatment options are limited, requiring high dose steroids, with early evidence to suggest the benefit of Janus kinase inhibition. Mortality is as high as 15.5% after three years.

VEXAS can offer a precise diagnosis to patients previously categorised as atypical systemic inflammation and undiagnosed recurrent fevers. The objective of this report is to highlight this recently documented condition to the ophthalmology community, along with its unusual constellation of symptoms and novel ocular presentation.

Methods:
Investigations revealed a marked left proptosis with pain on extra-ocular movement, bilateral pinhole visual acuity of 6/6, no RAPD and full Ishihara colour vision. Anterior and posterior segment examination was normal, with no evidence of disc swelling or signs of optic neuropathy. Orthoptic assessment revealed a 12 prism dioptre (PD) exotropia for near and 16 PD exotropia for distance, with an 18 PD left hypertropia for near and a 12 PD left hypertropia for distance. Hess chart displayed a left inferior rectus underaction, left medial rectus underaction and mild underaction of left superior oblique.

Further assessment revealed raised ESR, CRP, Ferritin and D-dimer. Longstanding macrocytic anaemia was noted as was the presence of neutropenia, lymphopenia and decreased monocytes. Ultrasound of the right lower limb revealed superficial thrombophlebitis. MRI brain indicated inflammation of the left orbital apex and also chondritis of the ear. Punch biopsy of the diffuse papular rash revealed results consistent with vasculitic process. Bone marrow biopsy demonstrated the presence of vacuoles and genetic testing has confirmed the presence of a mutation in UBA1. The patient was treated with pulsed IV methylprednisolone 500 mg for three days, followed by tapering oral prednisolone.

Results:
Initial steroid treatment resulted in a rapid and almost complete resolution of ocular symptoms, chondritis and rash within two weeks. He was discharged on oral prednisolone. The patient suffered a relapse of symptoms within two months on tapering prednisolone, and has since been commenced successfully on tofacitinib (JAK inhibitor) to which he is responding well and remains on treatment over 1 year later.

Conclusion:
In summary VEXAS is a novel haemto-immune disease caused by a somatic mutation in the UBA1 gene. This newly described condition, initially thought to be vanishingly rare, may in fact have a prevalence of 1:4,269 in males over 50. VEXAS should now be considered as a differential in elderly male patients with inflammatory eye disease, particularly in the presence of a triad of macrocytic anaemia, chondritis and inflammatory rash.

The Use of Dichoptic Therapy for Adult Amblyopia

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Objectives:
To determine the value of dichoptic therapy for adult amblyopia.

Methods:
45 patients underwent dichoptic therapy and their visual acuity and stereopsis was measured before and after a 6-week duration of dichoptic treatment.

Results:
20 of the 45 patients had anisometropic amblyopia. 13 of these had no stereopsis prior to therapy and 11 developed stereopsis during therapy. 7 had some stereopsis prior to therapy and 7 improved their stereopsis. Between 3 and 5 lines of CVDA were gained in the amblyopic eye. Other results for different amblyopia conditions will also be discussed.

Conclusion:
Dichoptic therapy is very effective in improving visual acuity and stereopsis in adult amblyopia, especially when it is caused by anisometropia.

Macular Hole 24 Hours Following a Trauma

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Objectives:
The aim of this report is to describe a case of a 21-year-old male, who presented with a right macular hole one day following a blunt trauma, along with commotio retinae and subretinal hemorrhage. The trauma was sustained by a football in a soccer game.

Methods:
Descriptive case report with data collected from the clinical record, patient examination, and analysis of diagnostic tests.

Results:
A previously healthy 21-year-old man, who presented to the eye casualty with a complaint of right blurred vision one day following a blunt trauma to the right eye by a ball during a soccer game. On examination, best corrected visual acuity was 6/12+2 in the right eye and 6/7.5 in the left. No hyphaema or traumatic mydriasis were seen .Fundus Examination of the Right eye revealed a zone of superotemporal commotio retinae with a scattered pre – retinal hemorrhages in the same quadrant. There was a well circumscribed rounded area of a subretinal hemorrhage in the supertemporal macula, along with a resolving inferiotemporal vitreous hemorrhage .The retina was flat. Optical coherence tomography of the macula showed a traumatic right macular hole with a base diameter of approximately 29 micrometers.

Conclusion:
This case report highlights that the traumatic macular holes can occur immediately in the first day following a blunt trauma.

Vitamin A Deficiency with Visual Loss in Autistic Children

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Objectives:
In this study, we present a small case series of children with diagnosed ASD, who presented with visual symptoms due to Vitamin A deficiency. This deficiency was linked to inadequate dietary intake due an extremely restricted diet. We propose that children presenting with ASD with visual loss should be assessed for underlying Vitamin A deficiency.

Methods:
A small number of patients with a known diagnosis of autistic spectrum disorder were referred with night blindness to the paediatric ophthalmology service. Their vitamin A levels were checked at initial presentation in addition to their dietary intake. Vitamin A supplementation was introduced and their levels and visual outcomes were re-assessed at a clinic follow-up.

Results:
Three patients are included in this case series. Vitamin A levels were measured at initial presentation and at each clinical follow-up. Visual improvement was not guaranteed when Vitamin A levels were normalised indicating that some children will experience permanent visual loss.

Conclusion:
Vitamin A levels were notably reduced in children with autistic spectrum disorder (ASD) secondary to dietary restriction. The behavioural sequelae associated with ASD play a significant role here. Overall, correction with Vitamin A supplementation produced favourable visual outcomes in this case series.

A Subacute Right Optic Neuropathy in a Healthy 21-Year Old Male

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Objectives:
To report a rare case of a pituitary macroadenoma in an otherwise healthy 21-year old male, resulting in a right optic neuropathy. Treatment with oral Cabergoline (Dostinex) and Hydrocortisone led to an improvement of his vision from 6/120 to 6/6 over a 3-month period, with resolution of his right relative afferent pupillary defect. His visual fields improved from a dense bitemporal hemianopia to full visual fields in the right and left eyes respectively over this 3-month period.

Methods:
A 21-year old male presented to eye casualty via optometrist referral with reduced vision in his right eye for approximately 2 years. The referral queried whether the patient had longstanding right amblyopia or an organic causation of his reduction in vision. He had no medical or ophthalmic history of note.

On examination, his visual acuities were 6/120 and 6/6 in the right and left eyes, respectively. He showed a right relative afferent pupillary defect (RAPD) and confrontation revealed a dense bitemporal hemianopia. His extraocular movements were full. Anterior segment examination was unremarkable. Fundal examination showed pallor of the right optic disc and nasal thinning was demonstrated on Optical Coherence Tomography (OCT). No abnormalities of the left eye were noted on fundal examination and OCT examination. His cranial nerve examination of CN5-12 was grossly intact. A 30-2 visual fields examination showed a dense bitemporal hemianopia.

Results:
MRI brain showed a large pituitary macroadenoma measuring 58x50x32mm with focal haemorrhage present. Marked compression of the optic chiasm and bilateral cavernous extension with encasement and displacement of the internal carotid arteries was noted.

Bloods showed normal ACTH levels, normal thyroid function tests, normal cortisol levels and normal IGF-1 levels. However his prolactin was 284274 (normal range 86-324), indicating a large pituitary prolactinoma.

The patient was referred for neurosurgical input querying the need for surgical resection. He was commenced on Cabergoline 0.5mg TDS PO(Dostinex), Hydrocortisone 15mg BD PO, Esomeprazole 40mg OD PO. Repeat bloods following treatment revealed a prolactin level of 30.

Repeat MRI brain showed an interval reduction in size of the mass, measuring 46x43x31mm, with improvement in mass effect on hypothalamus and third ventricle. Over a 3-month period following treatment, his vision returned to 6/6 in the right and left eyes respectively, with resolution of his RAPD. Repeat visual fields testing showed full fields in the right and left eyes.

Conclusion:
Short courses of oral Cabergoline and Hydrocortisone can be extremely effective in treating pituitary prolactinomas, with complete resolution of the patient's RAPD and improvement in his visual acuity to 6/6 after a 3-month period. Our case shows that confrontation provides a simple but effective screening tool for visual field defects in an eye casualty setting. The case highlights the importance of appropriate investigations in patients presenting with query longstanding reduced visual acuity, and limiting amblyopia to a diagnosis of exclusion.

Clinical Validation of Patients Overdue for Outpatient Follow-Up, and Allocation of These Patients to Clinics in a Tertiary Referral Glaucoma Service: A Service Improvement Project

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Objectives:
The purpose of this service improvement project was to clinically validate patients overdue for outpatient follow-up, and to allocate these patients to clinics in a tertiary referral glaucoma service.

Methods:
Using lean healthcare principles, the glaucoma service in the Royal Victoria Eye & Ear Hospital (RVEEH) has developed a number clinics in order to streamline care. These consist of consultant-led glaucoma clinics, glaucoma assessment clinics (GAC) with virtual review in both RVEEH and Kilnamanagh-Tyman Primary Care Centre (KTPCC), ANP-led clinics, CNS-led clinics, and HMT-led clinics. In addition, general ophthalmology is also seen in the consultant-led clinics. Patients overdue follow-up for more than 12 months were identified by administrative staff. The medical records of these patients were reviewed by medical staff and a decision was made regarding their ongoing care.

Results:
1166 patients, awaiting follow-up since March 2016 to December 2021, were reviewed. 50.9% (n=593) of patients were allocated to specific clinics within the glaucoma service – 14.4% to a consultant-led glaucoma clinic, 7.5% to GAC (RVEEH), 11.6% to GAC (KTPCC), 11.1% to an ANP-led clinic, 5.7% to a HMT-led clinic, and 0.6% to a CNS-led clinic. 35.2% (n=411) of patients were allocated to general ophthalmology consultant-led clinics within the glaucoma service. 13.9% (n=162) of patients were discharged from the service as a result of this validation process – 1.3% should have been discharged as per the last note, 3.9% were deceased, 5.2% had non-glaucoma diagnoses that did not require ongoing follow-up, and 3.5% were being seen by another ophthalmology service.

Conclusion:
This service improvement project demonstrates that outpatient follow-up waiting lists can be effectively managed using streamlined clinics in a tertiary referral glaucoma service.

A Case with Retinal Whitening Which Lead to an Unexpected Diagnosis

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Objectives:
To present a case of a patient who was initially diagnosed with left branch artery occlusion due to fundal changes and history of subclavian artery occlusion which ultimately was actually a case of ocular syphilis with acute syphilitic posterior placoid chorioretinitis.

Methods:
Patient was seen and managed in a single centre in the Republic of Ireland. All data gathered from patient documents and anonymised.

Results:
A 54 year old lady presented to the eye casualty with one week history of blurry vision concentrated in the central and superior visual field of the left eye. The onset was sudden and persistent with no associated headache, pain or floaters. Her past medical history was significant for a right subclavian arterial occlusion which was possibly post-traumatic. Examination showed reduced visual acuity in both eyes (left 6/18, right 6/12) with reduced colour vision only in left eye. Left fundal examination revealed an area of retinal whitening centred on the optic nerve (inferior more than superior) and right central chorioretinal

atrophy. There was no ocular inflammation in the anterior or posterior chamber. Due to her past medical history and appearance of retina, an initial diagnosis of BRAO was given and patient had full medical workup. She was then seen in a uveitis clinic where further test ordered. Subsequently, her syphilis screening results came back positive. Patient was treated for neurosyphilis and the area of white retina was actually an area of acute syphilitic posterior placoid chorioretinitis. Her vision and ocular findings improved with treatment.

Conclusion:
This case highlights how ocular syphilis has the reputation of being a great mimicker. Inflammatory and infective cause in this case was low in the different diagnosis as there was no inflammatory changes in the eye. However the pattern of the white retinal lesion and chronic changes in the other eye did not fit a typical case of BRAO. Whilst past medical history is vital, it is also important for medical professionals to ensure that it is not a red herring which can lead to the wrong diagnosis and unnecessary investigations.

A 10 Year Review of Open Globe Injuries in a Tertiary Referral Hospital

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Objectives:
Open globe injuries refer to either blunt injuries causing globe rupture or sharp injuries which may be penetrating or perforating in nature. These are sight-threatening injuries and require emergent ophthalmic management. Prognosis for vision is dependent on the nature of the injury, as well as clinical and intraoperative examination findings. Our objective was to identify the outcomes of open globe injuries in the University Hospital Galway, a tertiary ophthalmic surgery referral unit, from January 2013 to January 2023 inclusive.

Methods:
A retrospective review of all cases of globe rupture was undertaken. The nature of the injury, vision, exam findings at presentation, time to surgery and intra-operative findings were recorded. Outcomes included vision at most recent follow-up, the development of complications, and the need for further surgery.

Results:
Globe injuries were most common in males under 40 years of age. The most common mechanism of injury was mechanical fall in those over 75 and blunt injury secondary to assault in those under 40. There was a reduction in presentations during 2020 secondary to COVID-19 restriction measures. Ocular Trauma Score (OTS) correlated well with final visual outcomes.

Conclusion:
Presenting OTS predicts final visual outcomes and may be valuable tool to counsel patients regarding expected visual outcomes.

Microbiological Profile of Culture Proven Cases of Endophthalmitis: A 10 Year Retrospective Study.

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Objectives:
To identify the microbial aetiology of infectious endophthalmitis in a Tertiary Referral Hospital over a 10 year period. To evaluate the presenting features, management and visual outcome of these patients. The impact of early vitrectomy in these patients was also analysed.

Methods:
A retrospective analysis was carried out on all patients presenting between January 2011 and January 2021 with clinically diagnosed infectious endophthalmitis who underwent microbiological evaluation. Intraocular specimens (aqueous and vitreous fluids) were evaluated. The clinical characteristics, management and outcomes of these patients was also reviewed.

Results:
44 patients with endophthalmitis underwent biological analysis, of which 63% (28) were culture positive. Coagulase-negative staphylococcus (CoNS) was most frequently isolated (57%), followed by Enterococcus faecalis (7%), Streptococcus viridans (7%) and Neisseria spp (7%). The remaining organisms isolated included Staphylococcus capitis, Acinetobacterbaumanii complex, Haemophilus influenzae, micrococcus luteus, Streptococcus Mitis, and Staphylococcus lugdunesis. No fungal organisms were isolated. Vitreous specimens were found to have a higher rate of culture positivity than aqueous specimens. 3 culture positive cases occurred over a four week period in February 2020, correlating with the use of face coverings during the COVID-19 period. The microbes isolated were found to be oral commensals.

Conclusion:
Gram-positive bacteria were the major cause of infectious endophthalmitis in this series, usually following intraocular surgery. CoNS was the most common isolate. The introduction of face coverings during COVID-19 resulted in an increased rate of endophthalmitis due to throat/respiratory commensals linked with altered respiratory airflow currents. A change of protocol in the use of these coverings around ocular procedures resulted in a reduction in the rate of endophthalmitis in the 2021 study period.

MOG IgG Optic Neuritis in the Paediatric Population – An Irish Case Series

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Objectives:
Recently, demyelinating syndromes in the paediatric population have become better defined. MOG IgG is a unique demyelinating cause with distinct features pertaining to treatment and prognosis. This is of importance as treatments are not universal for each cause of demyelinating disease. Therefore the ability to accurately distinguish amongst these unique clinical entities is critical for optimization of medical management as well as in the prevention of disability, maximizing visual outcomes and establishing a prognosis. We describe two recent cases of MOG IgG associated optic neuritis in paediatric patients who presented to Galway University Hospital.

Methods:
A retrospective chart review was conducted on two known cases of MOG IgG optic neuritis. The case notes, MRI images and OCT images were reviewed and analysed.

Results:
Case 1 - A 10 year old female presented to eye casualty with a drop in vision in her right eye to CF from 6/5 at baseline. Dilated fundal examination revealed right disc swelling with venous engorgement. She had a right RAPD. MRI demonstrated a longitudinally extensive optic neuritis from globe to chiasm. She went on to received intra venous methyl-prednisolone. Serum MOG IgG were found to be positive. She received a total of 6 months of steroids. Her end visual acuity improved to 6/6 but she has a persistent RAPD. Her HVF 30-2 demonstrated an enlarged blind spot in the right eye and residual mild temporal disc pallor. Her serum later became negative for MOG IgG.

Case 2 - A 6 year old female presented with a profound drop in visual acuity to 6/60 in her right eye accompanied by a swollen optic nerve head. Her MRI brain confirmed a long segment of T2 hyper-intensity and swelling along the right optic nerve involving the intra-orbital, intra-canalicular ad intracranial segments. Optic chiasm was normal as were other intracranial findings. She was commenced on intra venous steroids and responded well with a final visual acuity of 6/6 following an oral steroid taper as well as resolution of optic nerve head swelling. Her blood work demonstrated anti-MOG antibodies.

Conclusion:
Our series highlights a number of clinical findings which help identify MOG IgG optic neuritis in children. Firstly, the profound visual loss which often accompanies a presentation of MOG IgG optic neuritis in children(1) was evident in this series. Secondly, MOG IgG associated optic neuritis is reported to be associated with longitudinally extensive lesions along the optic nerve(1)

which we also describe. Thirdly, optic nerve oedema is frequently present(1) and this was also found to be true in our series. Each of these clinical parameters helped in the early identification of these presentations. The disease phenotype of MOG seropositive is currently being actively delineated. MOG IgG associated optic neuritis is associated with an excellent response to steroids. Therefore a high clinical suspicion and a timely diagnosis are important. Both cases in our series resulted in an excellent response to steroids and a complete resolution of symptoms.

Serum Eye Drops for Ocular Surface Disease - The Irish Experience

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Objectives:
The use of blood-based eye drops as therapy for many diseases of the ocular surface has become increasingly popular in ophthalmology. Both autologous – from patients themselves and heterologous – from donors, options exist. These serum eye drops are non-allergenic and have biomechanical and biochemical properties similar to tears.

Methods:
This study aims to describe that cohort with ocular surface disease treated with serum eye drops in Ireland over a ten-year period.

Results:
All patients treated with serum eye drops in Ireland between establishment of the service in 2010 and December 2020 were included and their medical records reviewed retrospectively. The indications for therapy, the duration of therapy and the occurrence of adverse events were recorded.

One hundred and two patients have been given serum eye drops since their use was introduced in 2010. Mean patient age at treatment onset was 48 years with range six months to 90 years. Forty-five per cent of patients were male. Fourteen ophthalmologists requested their patients commence serum eye drop use. In 83% of cases the ophthalmologist was a corneal subspecialist. Patients referred from the Royal Victoria Eye and Ear Hospital accounted for 84% of those starting treatment with serum eye drops. No adverse events were noted.

Conclusion:
As the evidence accrues, supporting the use of serum eye drops for many ocular surface diseases, our study demonstrates the Irish experience of the same with the treatment being well tolerated. In patients for whom serum drop treatment is indicated but autologous serum is either unavailable or inappropriate, allogenic serum offers an alternative option for therapy.

The Use of Amniotic Membrane Transplantation in the Treatment of Stevens-Johnsons Syndrome and Toxic Epidermal Necrolysis in the Pediatric Population

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Objectives:
To assess the outcomes on vision in those diagnosed with Stevens-Johnson syndrome and Toxic Epidermal Necrolysis in the Paediatric Population.

Methods:
A retrospective and prospective analysis was carried out of patients diagnosed with Stevens-Johnson syndrome and Toxic Epidermal Necrolysis who underwent amniotic membrane transplant during the acute stage of their disease. Pre-operative

examination was documented including the presence of ocular surface epithelial defects and scarring. A technique for inserting the membrane is described. The post-operative condition of the eyes was then assessed once disease became quiescent, including any long term sequelae in the form of dry eyes or ocular surface scarring and keratinisation.

Results:
A series of 3 patients is reported. All patients received regular preservative-free topical antibiotics, topical steroids, topical lubricants and required ICU admission for their acute condition. Systemic antibiotics were administered if required. All care was delivered by a multidisciplinary team of ophthalmologists, dermatologists, infectious disease, and anaesthetic consultants.

A 5-year-old boy presented with widespread skin blistering and sloughing of mucous membranes. Examination of his eyes showed bilateral extensive epithelial defects involving the bulbar and tarsal conjunctiva. The cornea were unaffected. He underwent an AMT to both eyes. This involved using two 4x4cm dehydrated amnion to each eye. The membranes were positioned to ensure complete coverage of the cornea, tarsal and bulbar conjunctiva, and eyelid margins. This involved using a symblepharon ring to place the membrane into the upper and lower fornix. The membrane was then reflected over the eyelid margin and secured with 6-0 vicryl sutures over bolsters. The AMT dissolved over two weeks. He had no further epithelial defects of his ocular surface and did not experience any long-term sequelae secondary to SJS.

A 3-year-old girl presented to hospital with a 2-day history of severe epidermal and mucous membrane blisters on a background history of a respiratory illness. Initial examination of both eyes revealed bilateral total bulbar conjunctival epithelial defects, 70% epithelial defect of the four tarsal conjunctiva, no corneal involvement and bilateral eyelid margin involvement. She underwent bilateral AMT on day 2 of admission using the same method described above.

The AMT dislodged in the left eye at 2 weeks and she was brought to theatre and found to have a 25% corneal epithelial defect of her left eye with no involvement of her right eye. She underwent a second AMT to both eyes. At this time she remained in ICU necessitating intense skin care and nursing support. 4 days later the AMT was removed, and a small left corneal epithelial defect was noted. Otherwise, the ocular surface and fornices were normal. There were focal areas of subepithelial fibrosis of the tarsal conjunctiva without epithelial defects in either eye. An amnio clip was placed on the left eye.

A 7 year old boy suffered an electrical injury to both eyes with bilateral corneal and bulbar conjunctival epithelial defects. He underwent bilateral AMT's which dissolved over a period of 10 days with resolution of the epithelial defects. There were focal areas of subtarsal fibrosis but no long-term sequelae of SJS.

All patients have normal vision, no structural lid abnormalities, and normal corneas. No patient has long-term dry eye.

Compulsion:
Stevens-Johnson Syndrome and Toxic Epidermal Necrolysis can cause total limbal stem cell deficiency with subsequent bilateral corneal blindness if not managed in a timely manner. AMT has been shown to lead to improved outcomes when performed early in acute disease compared to traditional supportive therapy. All of our patients required ICU admission, intense dermatologic and ophthalmic care often requiring daily sedation to provide this care and in one case required three surgical procedures to provide the necessary care. Our series highlights the importance of early intervention with AMT in paediatric patients with SJS-associated epithelial defects and that such intervention can result in good outcomes.

A Five Year Analysis of Corneal Investigations Performed in an Irish Tertiary Hospital

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Objectives:
To examine the efficacy and prognosis in clinical course from diagnostic corneal samples (corneal scrape or microbial/PCR swab) in an Eye Casualty setting.

Methods:
A retrospective review was conducted of all patients with ophthalmic microbiological samples sent to the Microbiology laboratory between January 2018 and December 2022 inclusive. These were cross referenced against electronic patient chart records (Medisoft) to identify corneal samples taken during consultations in Sligo University Hospital.

Results:
A total of 596 samples were reviewed. Corneal samples were obtained from 127 eyes of 118 patients. Of those, 53% were male and with a mean age of 54.59 years.
A causative organism was identifiable in 38 cases (32.2%).

The most common diagnosis was keratitis in 109 cases (92.37%).
These may be subdivided as 1. ulcers; corneal 19 (16.1%) and neurotrophic 3 (2.5%)
or as 2. Keratitis

- contact lens associated 15 (12.7%)
- pseudomonas 7 (5.9%)
- fungal 2 (1.6%)
- marginal 11 (9.3%)
- peripheral ulcerative 4 (3.3%)
- moraxella 3 (2.5%)
- acanthamoeba 3 (2.5%),
- herpes simplex 11 (9.3%)
- bacterial 5 (4.2%)

Topical ofloxacin was the initial antibiotic of choice in 70 cases (64.2%).
Topical fortified antibiotics (ceftazidime and vancomycin) were the primary antibiotics of choice in 23 cases (21.1%). 19 cases (17.43%) were escalated to fortified antibiotics based on dis-improving clinical conditions.
9 of these cases (47.3%) were later de-escalated based on sensitivity profiles; wherein 8 (88.8%) were successful with chloramphenicol.

96 keratitis presentations (88%) had an appropriate diagnostic scrape or swab taken on the day of presentation. The remaining 13 cases (12%) had a sample taken between 3 to 24 days into medical management, averaging 9.1 days. This delay in sample taking was associated with a longer treatment course requirement compared to patients investigated at the first available opportunity, averaging 46.6 and 28.08 days respectively.

Staphylococcus species were the most commonly identified micro-organism. Most were sensitive to at least one antimicrobial agent, particularly chloramphenicol (6/11 – 54.5%). The majority of samples otherwise cultured either no growth or commensal pus cells (67%).

26 swabs were taken for HSV and 11 were positive. 11 (42.3%) were treated with topical aciclovir and 15 (57.6%) were treated with oral aciclovir - 8 between them being dual therapy. Treatment was based on clinical suspicion in 16 (61.5%) cases, and was based on a prior history of herpetic eye disease.

A total of 6 eyes were treated for suspected fungal keratitis, however only two cases of this were confirmed on corneal scrape. They were treated with three month and six month courses of topical voriconazole respectively, tapered according to clinical response. Both cases were associated with trauma from organic material.

There were 3 confirmed cases of acanthamoeba keratitis. All were associated with contact lens use. Resolution of infection with rigorous topical chlorhexidine and brolene was achieved in all cases. One case required referral to a national centre for expert guidance. Visual outcomes at presentation to conclusion of therapy varied from Logmar 1.6 => 1.6, -0.1 => 0.0 and 0.05 => 0.05

There were 7 confirmed cases of pseudomonas keratitis. 6 were associated with contact lens use. 1 of 7 (14.2%) pseudomonas cultures showed "intermediate" resistance to ciprofloxacin, broadly in line with published statistics for this area (Willcox et al., 2010).

Ulceration was the second-most frequently identified presentation and was primarily associated with ocular surface disease (45.45%) or trauma (9%). 6 of 24 (25%) bacterial ulcers were treated with fortified ceftazidime & vancomycin as the initial therapy. Treatment was de-escalated to ofloxacin or chloramphenicol based on laboratory sensitivities for 2 cases (33%) or 4 improved clinical considerations (67%).
All other ulcer cases responded to ofloxacin or an antiviral.

Conclusion:
Current procedure for the investigation and management of corneal presentations in this tertiary referral centre is broadly in line with established practices for an emergency room setting.

Our most significant finding is that prompt diagnostic initiation is positively correlated with a reduced time period to attain successful treatment. Identifiable micro-organisms currently do not show significant levels of antimicrobial resistance. In addition, organisms such as pseudomonas and acanthamoeba that are typically associated with prolonged and severe infection have been recorded to respond well to known therapeutics.

"Say What You See", Characteristic OCT and Fundal Changes in a Rare and Underreported Macular Pathology – A Case Series

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Objectives:
Anecdotally there has been an increase in Acute Macular Neuroretinopathy (AMN) presentations to our service since the onset of the COVID 19 pandemic. This case series represents one of the largest collections in the literature of this rare and under recognised pathology.

AMN was first reported in 1975, it most commonly affects young women (greater than 80% of cases reported as female with an average age of approximately 30) and is reported as a rare disease. Increased AMN incidence has been reported worldwide since the COVID 19 Pandemic, pre-pandemic the incidence has been reported as between 1/100,000 to 1/1,000,000 the latter likely an underestimation due to under-recognition. However, incidence during the pandemic has been reported to be in the region of 10-fold higher.

AMN is defined by the presence of reddish brown intraretinal wedge shaped lesions around the fovea with the fovea spared in the majority of cases. Patients generally present with a sudden onset of single or multiple paracentral scotomas, these scotomas generally persist indefinitely with some resolution reported over months. AMN has been correlated with causes of vasospasm/ vasoconstriction, the use of oral contraceptives and viral illness (increasingly in recent times to COVID 19 positivity).

Methods:
We analysed cases of AMN that have been encountered by the medical retina service in RVEEH. Cases with OCT and fundus photography confirmed AMN from the defined time period were selected and analysed with regards to patient demographics, visual changes and symptoms present and whether there was a known viral illness/ Covid positivity or other previously correlated possible inciting factor where possible.

Results:
7 patients (12 eyes affected) were identified, all patients were female and Caucasian. 6 of the 7 patients presented in a 10-month period from March 22 to January 23. The average age was 31 with a range from 22 to 48. 3/7 had a positive covid test within the preceding 2 weeks. Of the remaining patients, one tested positive for influenza, another had a viral illness at the time that symptoms began, but presented too late to be tested and two reported no illness around the time of symptoms beginning (these patients both presented to our service several months after the onset of symptoms).

Visual symptoms on presentation were varied with areas of missing vision, flashing/coloured orbs/disks and dots in the central vision most commonly described. The majority of patients (6/7) had 6/6 or better vision on presentation, the outlier patient had foveal involvement and a good recovery of vision. All patients reported an improvement or resolution of symptoms in subsequent follow up however 4/7 described continued scotomas that affect precision tasks. Patients in general were healthy, one had hypo-thyroidism and another was pregnant at the time of onset.

Conclusion:
AMN is an important differential for patients presenting with the symptoms described. Although there is no recognised treatment, recognition and diagnosis can prevent the burden of further unnecessary investigations. The aetiology of AMN is poorly understood but it is believed to affect the deep capillary plexus. Several papers have suggested a micro-thrombotic aetiology to explain the link to COVID 19 and other relatively prothrombotic states such as pregnancy. Our findings appear to support the consensus that recognition of AMN has increased since the beginning of the pandemic, this may be due to the reported increased incidence or perhaps relate to increased awareness. The suggested correlation between COVID 19 positivity and AMN is supported by this case series.

A Case of Irreversible Vision Loss Secondary to a Laser Pointing Device

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Objectives:
To outline the case of a self-inflicted laser injury in the setting of presumed self-harm. The images serve to show the severity of permanent damage that can be inflicted with commercially available LASER pens/pointers and also show several complications of photocoagulation that are not commonly reported.

Methods:
Patient notes and imaging from the presentation were reviewed including OCT, and widefield colour photography / autofluoresence. A review of literature relating to similar cases was also conducted.

Results:
A 25-year-old male presented to eye casualty with a visual acuity of counting fingers in both eyes. He has previously been linked in with community mental health supports. The patient reported obtaining a laser pointer from his friend and spending several hours a day looking at the laser. This lasted for one week. He reported hearing a 'popping' noise numerous times during this experience.

Examination showed bilateral mild anterior uveitis in both eyes with normal intraocular pressures. Fundal examination revealed extensive bilateral macular and retinal laser marks, similar to those obtained from pan retinal photocoagulation. These ranged in age from well-established pigmented burns to newly white burns. There was foveal involvement in both eyes with evidence of significant thinning and scarring. OCT displayed sub-retinal and intra- retinal fluid in the right eye. There was also evidence of an inferotemporal branch retinal vein occlusion in this eye secondary to the laser burns.

The patient was commenced on topical steroid drops and advised to come to clinic for further management of his macular oedema. His case was discussed with the hospital social worker and the patient's GP early the next morning who both made direct contact with the patient to provide support. He failed to attend follow-up and refused to be registered with the NCBI.

Conclusion:
This case highlights the devastating and irreparable damage caused by these easily obtained devices on vision and displays the importance of keeping such devices away from vulnerable people. The presence of a branch retinal vein occlusion apparently secondary to photocoagulation is of interest to all of those engaging in PRP.

Ultrathin Descemet Stripping Automated Endothelial Keratoplasty versus Descemet Membrane Endothelial Keratoplasty – A Systematic Review and Meta-Analysis

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Objectives:
Endothelial keratoplasty (EK) is a commonly performed transplant procedure used in the treatment of corneal endothelial dysfunction. The aim of this systematic review and meta-analysis is to evaluate the differences in visual acuity outcomes, endothelial cell density (ECD) and complications between two forms of EK, ultrathin descemet stripping automated endothelial keratoplasty (UT-DSAEK) and descemet membrane endothelial keratoplasty (DMEK).

Methods:
A literature search of MEDLINE, Embase and Cochrane Library was conducted to identify studies reporting comparative results of UT-DSAEK versus DMEK. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement was used for search strategy. Of 141 titles, 7 studies met the inclusion criteria; best corrected visual acuity (BCVA) (LogMAR), ECD (cells/mm2), and complications were compared, with all statistical analysis performed using Review Manager.

Results:
At total of 362 eyes were included for analysis. DMEK resulted in significantly better BCVA at 3 months (0.14 vs 0.22, p = 0.003), 6 months (0.08 vs 0.18, p=0.005) and 1 year post-op (0.07 vs 0.14, p = 0.0005). UT-DSAEK resulted in significantly lower total complications (25.2% vs 57.3%, p = 0.0001) and rates of re-bubbling (11.0% vs 33.7%, p = 0.004). No differences were found in ECD between the two procedures (1,541 vs 1,605, p = 0.77).

Conclusion:
DMEK results in superior visual acuity rates with quicker recovery. However, UT-DSAEK has a more favourable complication profile, particularly regarding lower rates of re-bubbling. Both are valuable options in the treatment of corneal endothelial disease and choice of procedure may depend on surgical expertise.

Visual Outcome of Early Diagnosis and Vitrectomy in Toxocariasis Panuveitis

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Objectives:
Toxocara Panuveitis, predominantly caused by Toxocara canis, is a common zoonotic parasitosis worldwide. Toxocara infection is a cause of vision impairment and blindness. The presented Case Report investigates the visual outcome of a patient diagnosed with Toxocariasis Panvueitis and Its early management with vitrectomy.

Methods:
Case Report on Single Patient

Results:
Improvement of left visual acuity from Hand Movement to 6/6 after vitrectomy.

Conclusion:
Early Diagnosis and Management with Vitrectomy and Steroids Can Minimize the risk of potential Vision Loss in patients with Toxocara Panuveitis.

A Traumatic Tail

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Objectives:
To present a case of conjunctival lymphangiectasis presenting after trauma as a subconjunctival haemorrhage.

Methods:
Clinical review with patient history and clinical photographs demonstrating fresh blood in the conjunctival lymphatic filled channels.

Results:
This presentation outlines the clinical features of the acute presentation of haemorrhagic conjunctival lymphangiectasis.

Conclusion:
This presentation illustrates the features and discusses the presentation, differential diagnosis, and management of conjunctival lymphangiectasis.

Pituitary Adenomas – The Incidence of Visual Field Defects in a Sample of Ophthalmic Patients

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Objectives:
The prevalence of pituitary adenomas has been estimated at greater than 25% of the general population. The majority of these are asymptomatic and incidentally found. However, they comprise approximately 16% of intracranial neoplasms. Primary ocular effects of such include monocular and chiasmal visual field defects, diplopia and optic atrophy, while secondary effects can include papilloedema. Visual field defects need to be monitored regularly to assess progression of disease and effects of treatment.This study aimed to assess the frequency of pituitary adenomas in a single-centre, ophthalmic patient population. We further investigated the presence or absence of visual field defects and potential influencing factors, including optic chiasm impingement, surgery and treatment success.

Methods:
A retrospective review of all patients with a diagnosis of pituitary adenoma presenting to an ophthalmic clinic over a 12 month period was carried out. Data was analysed including time since diagnosis, treatment variations, visual field defects and their progression with treatment and biochemical abnormalities.

Results:
Between 1 February 2022 and 31 January 2023, there were seventeen patients with a diagnosis of pituitary adenoma who had appointments at our ophthalmic clinic. Ten were female, while seven were male with a mean age of 63.5 years, (range 34-88). The average time since diagnosis was five and half years, (range 1-15), with 5/17 (29%) being treated surgically and the remaining 12/17 (71%) being managed conservatively. Six patients (35%) had visual defects demonstrated on Humphrey Visual Fields testing, six (35%) had no visual field defects and five (30%) failed to engage with follow up. Only four patients (24%), had OCT changes, and these did not always correlate to visual field defects.

Conclusion:
In our practice, patients with a pituitary adenoma made up a small subsection of our patient population. We exemplified the importance of regular visual field testing to highlight progression and response to treatment, while discordance between OCT defects and visual field defects was explored. Our study also highlighted lack of engagement with follow-up to be a pertinent issue within this population.

The impact of the National Diabetic Retinal Screening Programme on the Training of Ophthalmology Trainees in the Performance of Diabetic Laser Procedures

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Objectives:
This study aims to examine the impact the establishment of the diabetic retinopathy screening Programme has had on trainee exposure, learning and perceived confidence in performing laser procedures used in the treatment of Diabetic Retinopathy. There are a number of objectives;

1. To determine the number of panretinal photocoagulation and focal macular laser treatments carried out before and after the establishment of the Diabetic Retinal Screening programme by:

(a) General Ophthalmic Consultants

(b) Diabetic Retinopathy Screening Consultants

(c)Non-consultant hospital doctors

2. To establish whether the numbers of these lasers are increasing or decreasing due to DRS screening
3. To determine whether the DRS programme is impacting on the number of lasers NCHDs can perform
4. To establish the NCHDs perception of their training, exposure and level of confidence surrounding laser procedures.

Methods:
A Retrospective dataset gained from the laser logbook located in the Ophthalmology Department, CUH. This examines the number of diabetic laser treatments performed and the physician grade performing them from a 5-year period both prior to and after the establishment of the diabetic retinopathy screening programme. A newly designed questionnaire examines the opinions of NCHDs regarding their exposure to Diabetic Laser Procedures. It was distributed to NCHDs who have worked or are currently working in Cork University Hospital in the Ophthalmology department.
Statistical analysis was performed using MS excel/SPSS.

Results:
Retrospective Dataset - In the 5-year period prior to diabetic retinopathy screening establishment there were 785 diabetic laser treatments performed. Of these 51.5% were performed by NCHDs while 48.6% were performed by either Consultant or Community Only. In the period 5-year period after the program's establishment there were 1988 diabetic laser procedures performed. Of these. 68.7% were performed by Community Ophthalmologist while only 24.8% were performed by NCHDs. Questionnaire - There were 17 responses to the questionnaire. 76% were SHOs while 24% were registrars. When asked if they thought that the fact diabetic laser treatments are now mainly performed in consultant only clinics since the establishment of the diabetic retinopathy screening programme has impacted on their training- 41% strongly agreed while 59% agreed. When asked if they believed that this impact was negative- 47% strongly agreed while 53% agreed.

Conclusions:
There were 17 responses to the questionnaire, 76% of respondents were SHOs while 24% were registrars. When asked if they thought the fact that diabetic laser treatments are now mainly performed in consultant only clinics since the establishment of the diabetic retinopathy screening programme has impacted on their training-41% strongly agreed while 59% agreed. When asked if they believed this impact was negative 47% strongly agreed while 53% said agree.

Extent of Paediatric Ophthalmic Consults in Temple Street Hospital in Dublin

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Children's Health Ireland at Temple Street Hospital, Dublin.

Objectives:
To estimate a volume of paediatric ophthalmic consults over 11 months period, recognise their main reasons and determine a time between a consult request and eye examination as well as analyse on how follow-ups of the consults are recorded.

Methods:
A retrospective review of the consult book entries between the 1st of January 2022 to 22nd of November 2022 was performed.

Results:
Three hundred and ninety-eight entries were identified and grouped into three categories: ward consults (272, 68.34%), on-call (118, 29.64%) and retinopathy of prematurity – ROP (8, 2.08%). Nearly a half of the consults concerned children up to 9 years old (194, 48.74%) with 56 of them being of age below one. Between 24 to 46 consult requests were recorded each

month. Approximately 70% were seen in 3 days since the request. A follow up for patients was recorded in the consult book in 182 cases (45.72%). For 15.57% (62 children) the next appointment was scheduled in 1-6 days. Main reasons behind the consult requests were neurological (123, 31% with papilloedema assessment), trauma (78, 20% with chemical injury on a lead), metabolic and syndromic (38, 9%), inflammation (16, 4% including a recent diagnosis of arthritis/ hip pain, TINU), infections (40, 10%), CVI (3, 1%) and NAI (14, 3%).

Conclusion:
Paediatric consults are seen by ophthalmologists in a timely manner. Vast majority of consults concern papilloedema, trauma and metabolic diseases and syndromes. Better methods of consult recording are needed. A volume of consults is higher than recorded. To establish it further, data from charts, clinical portal or evolve should be assessed. To improve consult flow, information such as ward team contact and ability to attend eye clinic should be recorded. A consult outcome sheet should be designed and filled in by a consulting ophthalmologist (further appointment type- PRN, inpatient, OPD, OPD time frame and extra tests (orthoptist, OCT mac/ discs, VF or electro-diagnostics) to ascertain timely follow-up.

Assessment of Association between Rate of Emergency Retinal Detachment Repair and Weather in University Hospital Limerick

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University Hospital Limerick, Limerick.

Objectives:
We aimed to assess whether a correlation could be observed between the number of emergency retinal detachment repairs performed in University Hospital Limerick and the weather over a one-year period.

Methods:
We collected the number of emergency retinal detachment repairs performed in University Hospital Limerick from June 2021 to June 2022 from the theatre logbooks, as well as the daily weather data for the same time period from Shannon Airport from the Met Eireann historical database. We divided the years' data into 4 quarters, and assessed expected surgeries on Wednesdays, Fridays and other days, based on the vitreoretinal surgeons' scheduled theatre days.

A chi-squared analysis was performed analysing the 119 retinal detachment surgeries performed, and temperature, wind and rainfall observed in Shannon Airport. All calculations were performed with Excel 2021.

Results:
According to the chi-squared analysis, three subsets of data accounted for most of the statistical value. In the 3rd quarter of 2021, 6 operations would have been expected and 10 were observed on a Wednesday, with multiple unusually warm days and few very wet or windy days. Concerning the 1st quarter of 2022, 11 operations would have been expected and only 6 were observed on a Friday while 11 operations would have been expected but 16 were performed on other days, during which time the weather was characterised by strong winds and low temperatures.

Conclusion:
It emerges from this data that the frequency with which retinal detachment repair surgeries occur does not appear to be due to chance, and when analysing this with daily weather parameters, it appears that a greater number of retinal detachment surgeries than expected were performed during favourable weather, while a lower number of retinal detachment repair surgeries than expected were performed during periods of bad weather.

Audit of Patient Wait Times Attending for Intravitreal Injections and Review of the Literature of Patient Psychological Impact of Wait Times

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University Hospital Limerick, Limerick.

Objectives:
We aimed to assess patient wait times after arriving at their scheduled intravitreal injection (IVT) appointment and the actual time of IVT administration, and whether a pattern could be observed in order to quantify and optimise patient wait times. We reviewed the literature on the topic of the psychological impact of long wait times for patients and strategies for optimising patient satisfaction with wait times.

Methods:
We collected the scheduled times from theatre lists and actual times of IVT administration from theatre logbooks for 298 patients from November 2022 to March 2023 in University Hospital Limerick. Mean wait times were calculated for patients and disparities were analysed for potential underlying patterns. All calculations were performed with Excel 2021. A review of the literature was performed on the topic of psychological impact of patients' wait times and strategies for improving patient satisfaction with wait times. Embase, Pubmed, Google Scholar were searched.

Results:
The wait time for patients attending for IVT ranged from 0 minutes to 211 minutes, with an average wait time of 70 minutes, and the longest wait times were experienced for appointments scheduled between 10:00 and 12:00. Of the 298 scheduled IVTs, 47 patients did not attend (DNA), thus revealing a DNA rate of 16%.

It emerged from our review of the literature that patient wait times and satisfaction with care were significantly correlated, and when delays occur strategies to reduce patient anxiety including informing patients of delays, apologising to patients and creating opportunities to use the wait time constructively all improve patient tolerance of longer wait times.

Conclusion:
Patient wait times for IVT in our centre tended to be shortest early in the morning and in the afternoon, and overall mean wait time was less than 70 minutes. Having deciphered a pattern in the longer wait times, this will allow us to discuss changes with our theatre manager to optimise wait times. Furthermore, review of the literature confirmed that while many patients may be tolerant of wait times in the healthcare setting, clear communication with patients, apologising for delays and offering opportunities for patients to utilise wait time all improve patient satisfaction with the care they receive and positively impact their psychological wellbeing.

Above The Midline; A Case Describing the Importance of a Clinical Sign

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Objectives:
To describe the ophthalmic presentation of a case of Diffuse large B-cell lymphoma.

Methods:
Descriptive case report with images.

Results:
A 57 year old male was referred to the eye department with a 'left eye cyst'. He complained of a 10 day history of left eye swelling with associated blurred vision and mild discomfort. He also described a non-resolving sinusitis ongoing for 1 month. There was no history of trauma and he denied B-symptoms.

On examination visual acuity was Snellen 6/6 right eye and 6/9 left eye. Intraocular pressure(IOP) was 15mmHg and 34mmHg. There was a visible firm mass superior to the medial canthus, which was non-fluctuant and appeared fixed to the skin (Figure 1). Pupils, colour vision and optic discs were normal. There was mild restriction of left supraduction and adduction which induced diplopia not previously noticed by the patient. He was commenced on g.timofluid.

Urgent CT orbit revealed a 5.5cm mass with homogenous contrast enhancement on the medial left orbit extending into the retro-orbital space and anteriorly into preseptal space, eroding through the lamina papyracea into the ethmoidal and frontal sinuses (figure 2). Biopsy by ENT with histopathologic examination confirmed a diagnosis of diffuse large B-cell lymphoma. Staging MRI showed a rapid interval increase in size of the mass to 7cm, with CNS involvement(figure 3). Bone marrow biopsy was negative for malignancy. He was admitted under haematology and commenced on R-COVOX-M combination chemoimmunotherapy for stage 1AE DLBC, germinal centre subtype.

Treatment was well tolerated and there was a rapid reduction in mass sino-orbital mass size. He has been referred for consideration of autologous stem cell transplant. At 4 month follow up, visual acuity was 6/6 both eyes, IOP 12mmHg both eyes with healthy optic disc appearance and reduced appearance of the superior medial canthal mass. IOP lowering drops were discontinued.

Conclusion:
Non-Hodgkin lymphoma(NHL) is a disease of the lymphoreticular system, 25% of which may originate as extra-nodal. Primary NHL of the paranasal sinus and orbit are rare, accounting for 1.6% and 1% of all NHL cases, respectively. Malignant lymphomas of the paranasal sinus are frequently misdiagnosed due to non-specific symptoms. When the disease involves the orbit, the patient may present to an ophthalmologist with more debilitating symptoms. This case highlights the importance of the ophthalmologist to identify a lesion above the medial canthus as potentially serious and life-threatening. Many referrals to ophthalmology may include the term 'cyst' and through proper triage and history taking, sinister cases can be identified and seen urgently. A multi-disciplinary team approach including ophthalmology, radiology, ENT, pathology and haematology is described here.

Paediatric Orbital Cellulitis Related to Invasive Group A Streptococcus

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Objectives:
A notable increase in Group A Streptococcus (GAS) infections was identified by the Health Protection Surveillance Centre (HSPC) in Ireland. We report the clinical presentation and surgical outcomes on patients with culture confirmed GAS in a paediatric cohort.

Methods:
A case controlled retrospective series of patients requiring surgical drainage of orbital cellulitis in the recent winter peak (October to January) of 2022/23 in Children's Health Ireland (CHI), Crumlin, Dublin. Inclusion criteria were a positive group A strep culture in orbital cellulitis requiring FESS and / or orbital drainage.

Results:
In total, 7 patients fulfilled the criteria. This was a noted increase compared to previous years. The mean age was 7 ± 5 years. All were unilateral with typically rapid progression of the typical clinical features with pyrexia. Medical comorbidities were only present in 1 with a history of allergic rhinitis. White cell count ranged from 10 to 26 × 10^9 /L while c-reactive protein (CRP) ranged from 70 to 280 mg/L. CT imaging confirmed the medial wall abscess most common in all but 1 involving the orbital roof. Early surgical intervention at a mean time of 2 ± 1 days from onset of symptoms reflective of the severity and rapid progression. Dramatic clinical improvement was observed on post-operative day 1 with hospital discharge occurring on average 7 ± 4 days following surgical intervention. At the most recent follow up appointment no patients had associated

complications or decreased visual acuity. Group A Streptococcus was isolated from surgical aspirates in 6 patients with blood cultures all negative. Re-accumulation of the orbital roof collection was the only case requiring a repeat drainage. Co-infection was common with influenzae A in 4 and varicella zoster in 1.

Conclusion:
A relative increase in GAS orbital cellulitis mirrors the nationally reported trend. GAS orbital cellulitis requires early surgical drainage being of rapid onset and progression with pyrexia. A precursor viral illnesses is a common trend. Surgical intervention is highly effective, however, a prolonged hospital stay is often necessary due IV antibiotics.

Chemical Injuries in University Hospital Waterford: Looking at Lime

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University Hospital Waterford, Waterford.

Objectives:
A chemical injury of the eye presents an acute emergency and requires immediate evaluation and management. We aim to review the demographics, chemical agents and clinical outcomes of patients presenting to our eye casualty.

Methods:
Retrospective review of 17 cases presenting with chemical injuries in a one month period in (February 2023) in University Hospital Waterford eye casualty department.

Results:
Mean age on admission was 34.9 years, mainly male (n=12, 70.1%) and 6 bilateral cases (35.3%). Three patients had an ocular comorbidity, two were amblyopic in the fellow eye and one had keratoconus in both eyes. 12 of the 17 cases happened while farming: ten were alkali burns from lime, two were from acidic agents, hydrolic acid used as a descaling agent and potassium hydroxide and sodium hydroxide used to make fertilizer. Of the farming chemical injuries; 3 required inpatient admission, 2 required an amniotic membrane (AmnioClip). Mean visual acuity on arrival was 0.3 LogMAR (Range 0.0 to Hand Movements).

Conclusion:
In a review of just one month in our casualty department, we observed that a majority of chemical injuries are farming accidents involving young men and alkaline lime. Easily avoidable and potentially devastating; our young farmers need to adopt preventive measures when working with lime.

A Cluster of Acanthamoeba

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Objectives:
Acanthamoeba keratitis (AK) is a rare, but potentially blinding infection of the cornea. To review the incidence of AK in Waterford University Hospital, as well as the patient demographics and outcomes.

Methods:
A three week period in Waterford University Hospital was identified as having a higher than usual positive corneal scrapings for acanthamoeba keratitis – 7 in one month. We retrospectively reviewed the clinical notes of patients with corneal scrapings testing positive for AK.

Results:
Fourteen cases tested positive in 2022, a significant increase from previous years. Nine were female and the mean age was 41. 13 patients were contact lens (CL) wearers. The mean presenting visual acuity was 0.7 LogMAR. Half required inpatient admission (n=7) with an average inpatient stay of 3.6 days. Two required an amniotic membrane and Botox tarsorrhaphy.

Conclusion:
CL users can be exposed to water that may be contaminated by Acanthamoeba; domestic tap water as well as swimming pool, hot tub and lake water. The seasonal association noted could be related to increased participation in swimming in the summer months. Improving CL and hand hygiene and avoiding CLs contamination with water could reduce the incidence of AK. In the longer-term, water avoidance publicity for CL users can reduce the incidence further. Ongoing surveillance of AK numbers will identify rises in incidence.

The Diagnosis and Treatment of a Rare Case Periorbital Necrotising Fasciitis Caused by Group A B-Haemolytic Streptococcus and Herpes Simplex Virus 1 in A Woman with Insulin Dependent Diabetes

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Objectives:
Necrotising fasciitis (NF) is a devastating infection characterised by rapidly progressing necrotising infection of the superficial fascia with secondary necrosis of the overlying skin. The most common causative organism is group A β-haemolytic Streptococcus (GAS). This case report describes a patient with group A β-haemolytic Streptococcus (GAS)-associated necrotising fasciitis (NF), who had only subtle signs of severity at initial presentation, making it therefore difficult to differentiate from a simple cellulitis.

Methods:
We report a rare case of dual infection with group A β-haemolytic Streptococcus (GAS) and Herpes Simplex Virus 1, causing periorbital NF in a 60-year-old patient with insulin dependent diabetes mellitus. We describe her surgical rehabilitation and outcome with clinical photographs, and emphasise that prompt diagnosis and treatment are crucial.

Results:
A combination of intravenous antibiotics and surgical debridement and subsequent skin grafting resulted in a beneficial outcome in our patient. If not treated quickly with antibiotics and debridement of the infected tissue, the patient may develop septic shock and even death within hours.

Conclusion:
Differentiating cellulitis and necrotising fasciitis can be difficult when presenting signs and symptoms are non-specific. Delay in diagnosis is often responsible for the mortality associated with the disease, therefore we recommend a high index of suspicion and frequent clinical review.

Unusual Case of Bilateral Choroidal Effusion

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Objectives:
To present an unusual case of bilateral choroidal effusion, to discuss etiology, differential diagnosis, investigations and treatment options including scleral window creation for drainage.

Methods:
Case presentation

Results:
69 years old patient presented with bilateral temporal visual field defect, which started first in his Left eye, followed into right eye two weeks later. His visual acuity without correction was 6/24 right eye and 6/18 in his left eye. His intraocular pressures were within normal range. Dilated fundal examination revealed bilateral nasal choroidal effusion. Patient has a medical history of metastatic malignant melanoma of right arm. He received chemotherapy and currently undergoing immunotherapy. He was started on oral steroids with no improvement, followed by bilateral subtenon's kenalog injection. Reduction of choroidal effusion noticed on the right eye post injections, with no improvement in his left eye. Patient had developed significant cataract in his left eye. He had Left cataract extraction and IOL with superonasal and superotemporal scleral windows creation. Follow up examination showed significant improvement in his Left eye.

Condition:
We present an unusual but important case of bilateral choroidal effusion, which can cause significant visual loss. Prompt and effective treatment modalities should be undertaken to limit any visual loss.

3D Printed Biomechanical Model of the Human Lamina Cribrosa

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[4]University College Dublin, Dublin.

Objectives:
Histological analysis of the lamina cribrosa (LC) has defined its morphology as a complex three dimensional, porous, connective tissue structure. It provides structural and nutritional support to the axons of retinal ganglion cells are they exit the eye to the brain. Evidence has shown that the site of glaucomatous damage originates in the laminar area, however the biomechanics of this damage are not well understood. Herein, we aim to create a 3D printed biomechanical model of the human LC, and secondarily to study laminar stress and strain in response to simulated elevated intraocular pressure (IOP).

Methods:
A stack of PNG images of the segmented human LC was obtained. The images were spaced at 1.5 µm between images and pixels measuring 1.5 µm x 1.5 µm. The images were aligned, converted into STL files, and collated into an image volume using the Raindrop Geomagic software, with the resulting stacked volume at 1.5 x 1.5 x 1.5 µm per image voxel.

Results:
The BIONOVA X 3D bioprinter by CELLINK was used to print multiple LC slices to multi well plates. A 10 µm feature resolution was achieved. Initial models were printed using a polyethylene glycol (PEG) hydrogel.

Conclusion:
To our knowledge we are the first group to create a 3D biomechanical model of the human LC. A variety of biomaterials with variable stiffness can be used to study chronic deformations and changes in the LC in an ex vivo model. We hope to broaden the body of knowledge surrounding glaucoma pathogenesis and possibly identify biomarkers for its early detection.

Functional and Anatomical Outcomes in Refractory and Large Macular Holes Treated with an Intraretinal Fluid Expansion Technique

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Objectives:
Primary full thickness macular holes (FTMH) with a minimum linear dimension of 550 micrometres, measured by spectral domain optical coherence tomography, have a high treatment failure rate. There are many described techniques for closure of refractory macular holes, however, there is no consensus on a gold standard. Four quadrant intraretinal fluid expansion (IRFE) is a relatively straightforward technique which, to our knowledge, has not been described in the literature to date for closure of FTMHs. We describe the safety, visual and anatomical outcomes of a patient cohort undergoing IRFE.

Methods:
This was a single-center retrospective cohort study of 11 patients over 4 years. All patients underwent 4 quadrant IRFE surgery. Two patients had IRFE combined with pars plana vitrectomy and internal limiting membrane peeling for primary large FTMH. 9 patients underwent stand alone IRFE surgery in treatment refractory FTMH. Patient demographics, time to surgery, pre and post operative visual acuity, pre and post operative anatomical status were recorded. The primary outcome was FTMH closure. The secondary outcome was improvement in logMar visual acuity.

Results:
The primary outcome measure was achieved in nine patients. Improvement in visual acuity was strongly linked to hole closure and there were no significant adverse outcomes.

Conclusion:
IRFE was a safe procedure in our cohort and demonstrated high closure rates. Further study of IRFE is required to further demonstrate its safety and compare its efficacy to other popular secondary procedures.

Surgical Trends in Glaucoma: An Analysis of Glaucoma Procedures Performed in MMUH from 2012 to 2022

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Objectives:
This study aims to identify trends in the surgical management of glaucoma within the Mater Misericordiae University Hospital (MMUH).

Methods:
A retrospective analysis of surgical registers from MMUH was performed for the years 2012 to 2022 inclusive. Glaucoma surgical procedures were classified into subconjunctival (trabeculectomy, Xen microstent or Preserflow microstent), trabecular bypass (iStent), suprachoroidal (Cypass microstent), glaucoma drainage devices (Ahmed implant, Paul Tube, Baerveldt implant) cyclodestructive and goniosynechialysis. The date and frequency of procedures was recorded, and trends analysed.

Results:
The total number of glaucoma surgeries has increased almost year on year from 2012 to 2022. The frequency of glaucoma procedures increased by an average of 6.3% per year. This increase is primarily attributable to the increased number of glaucoma drainage device surgeries and trabecular bypass surgeries. The frequency of glaucoma drainage device surgery has increased from 5 procedures in 2016 to 20 procedures in 2022. A similar trend was seen in trabecular bypass surgery, increasing from 4 procedures in 2018 to 13 procedures in 2022. Subconjunctival surgery has remained the most common type of glaucoma procedure performed, accounting for between 41-81% of surgeries each year.

Conclusion:
Ongoing advancements in surgical glaucoma have resulted in an increased service demand, with this trend likely to continue into the future. The increased frequency of glaucoma drainage devices also indicates the increased complexity of glaucoma attending the glaucoma service.

Identifying Keratoconus Using an Automated Machine Learning Model

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Objectives:
To evaluate the performance of an automated machine learning (AutoML) model to identify forme fruste keratoconus and to compare this with a bespoke model.

Methods:
A classification model was trained using keratography results from a publicly available dataset of 3162 eyes. The model aimed to classify eyes as 'normal', 'forme fruste' or 'keratoconus'. The model was built by a clinician with no prior ML experience, using the Google AutoML platform. Results obtained were subsequently compared to a manually coded model built by an experienced developer.

Results:
The AutoML model achieved a receiver operating characteristic area under the curve (ROC AUC) of 0.99, compared to a ROC AUC of 0.83 in the bespoke model. The AutoML model's accuracy of 0.96 was marginally higher than the 0.93 achieved manually. The AutoML model proved effective in identifying forme fruste keratoconus, misclassifying forme fruste as normal in only 5% of cases. Model features with the highest importance were steepest corneal curvature (steepest.3, steepest.1 and steepest.posterior), followed by corneal asymmetry (asymmetry.1 and asymmetry.5).

Conclusion:
AutoML has the potential to enable clinicians with no prior coding experience to train, develop and test ML models. Lowering the barrier of entry and improving access to ML will identify new use cases and may improve the accuracy of manually built models.

The Role of TAX1BP1 in Fibrosis of the Optic Nerve Head in Glaucoma

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Objectives:
Glaucoma is the leading cause of irreversible visual impairment and blindness worldwide. The classical feature of optic nerve head cupping seen in glaucoma is secondary to fibrosis of the lamina cribosa (LC). The process of fibrosis is a high energy

demanding activity. Previously, glaucomatous LC (GLC) cells have been shown to have up-regulated markers of proliferation, however down-regulated markers of apoptosis, a source of the essential elements necessary for proliferation. Autophagy recycles crucial elements for the cell cycle and has been shown to be up-regulated in GLC cells and trabecular meshwork. Single cells RNA studies of human donor GLC cells have earmarked pro-apoptotic protein TAX1BP1 as a possible master regulator of this process. The aim is to characterise the role of TAX1BP1 by examining the downstream outcomes of various autophagy, apoptotic, proliferative and fibrotic markers.

Methods:
Human donor glaucomatous and non-glaucomatous LC (NLC) cells were cultured. NLC cells were subjected to glaucoma related stimuli, mechanical stiffness, and cultured on stiff substance (100kPa) and soft substance (25kPa). These 4 experimental groups were assessed for gene expression and protein expression using RT-PCT and Western blotting respectively.

Results:
TAX1BP1 gene expression is up-regulated in NLC cells cultured on stiff substance (100kPa) compared to soft substance (25kPa) ($p< 0.05$).

Conclusion:
If indeed TAX1BP1 is a master regulator of glaucoma pathogenesis are we able to regulate the known profibrotic markers of glaucoma by successfully down-regulating it. Could this be a potential new site of targeted glaucoma therapy?

Review of the Glaucoma Service Referral Process in a Major Specialist Centre in Ireland

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Objectives:
Glaucoma is one of the leading causes of blindness in Ireland. In 2017 NICE published guidelines 'Glaucoma: Diagnosis and management'. As a result of the guidelines one of the key recommendations was the implementation of an effective referral filtering system. The Mater Misericordiae University Hospital (MMUH) Ophthalmology Department provides a Glaucoma service for its catchment encompassing the North-East Integrated Eye Care Services caring for an estimated 1.2 million people. To date, glaucoma referrals to MMUH have not been characterised nor has the quality of incoming referral been objectively assessed. The aim of this audit was to characterise all referrals received by the glaucoma service at MMUH.

Methods:
A retrospective 3 month audit from 1st September 2022 to 31st December 2022, of 2 referral systems, email referrals and the in-hospital integrated electronic patient information system 'PatientCentre' was performed.

Results:
Over the 3-months a total of 182 patients were referred to the glaucoma service in MMUH. 81 patients were referred through the new email system and 101 patients through 'PatientCentre'. The main geographical location of referrals was North Dublin (40%) followed by Cavan-Monaghan (16%). 'PatientCentre' predominantly received referrals from the Ashgrove Ophthalmology facility (70%). The majority of the email referrals were from Optometrists (73%) compared to 'PatientCentre' (4%). Optometrist's referrals were of higher quality where additional information such as OCT and/or perimetry was included in 61% of email referrals compared to 40% of all 'PatientCentre' referrals.

Conclusion:
The introduction of the email referral system has allowed referrals to be triaged not just on urgency but on geographical location. This aids the service in the ability to refer on patients to community hubs based on need, taking pressure off the hospital system.

Six Month Pilot Data from the NERIECS High Volume Cataract Surgery Pathway in MMUH

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Objectives:
High volume cataract surgery pathways have been implemented in many hospitals throughout the world. These pathways are needed due to an aging population, lengthening waiting lists and an increased demand for healthcare.

These pathways allow a greater number of cataract surgeries to take place compared to traditional cataract surgery pathways and follow a dedicated system from referral to post-operative follow up, using LEAN principles, and optimisation by all stakeholders involved.

This audit presents the first six month data from the NERIECS high volume pathway recently established through MMUH. The parameters analysed were: (1) the number of patients who completed each stage of the pathway and (2) the time periods between referral, pre-operative, surgical, and post-operative clinic dates.

Methods:
161 patients were referred for cataract surgery from community opticians using the dedicated referral form between the period 12/12/2021 to the 03/06/2022. Patients were then given an appointment for the "one-stop" combined medical and nursing pre-operative clinic followed by a surgical date and an optometrist led post-operative clinic. Data was analysed on 03/01/2023.

Results:
99/161 (62%) of patients referred attended the pre-operative clinic at the time of audit. 74/99 (75%) of patients from the preoperative clinic completed cataract surgery. 57/74 (77%) of patients who had surgery attended the postoperative clinic. When confounding factors are accounted for, such as DNA's, this improves to 95%, 100% and 92% respectively.

The mean time from optician referral to preoperative clinic was 126 days, from preoperative clinic to surgery was 29.4 days, and from surgery to postoperative clinic was 30.3 days.

Conclusion:
The high volume cataract pathway in the MMUH is the first of its kind in Ireland, establishing a standardised, efficient process which aims to move pre-and post op care to the community and deliver high volume surgery based on international models. It has reduced average patient visits from 4.5 to 3. With theatres running at full capacity, the cataract output will be trebled at the Mater.

This data shows that the high volume cataract pathway in the MMUH is efficient once patients have attended the preoperative clinic, with an effective conversion to surgery rate of 95%. Capacity issues are still the major issue delaying referral times to the pre-operative clinic and challenges remain to scale the pathway and move it into the community.

Clinical Audit of the Rapid Access Clinic – Mater Misericordiae

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Objectives:
To assess the frequency of neovascular age related macular degeneration (nAMD) diagnosis being made after referral to the Rapid Access Clinic (RAC). To assess adherence to Royal College of Ophthalmology (RCOphth) guidelines of commencing anti-VEGF intravitreal injections within two weeks upon detection of nAMD

Methods:
Data collection was conducted retrospectively using the eye emergency department (EED) email, the RAC calendar cross compared with the Mater internal software 'Mater Patient Centre' – 'patient documents' and 'EED attendance by date' for the time period up to and including 20.07.2022 until 07.12.2022.

Results:
A total of 41 patients physically attended for review within this time period. In this cohort of 41 patients new cases of nAMD were identified in 25 eyes (61%) which can be seen in figure 1 below. A total of 2/41 (5%) of patients not diagnosed with new nAMD did receive injections. One of these was for a superotemporal branch retinal vein occlusion (BRVO) and the other was a nAMD however this patient was already undergoing antiVEGF intravitreal injections under a vitreoretinal consultant.

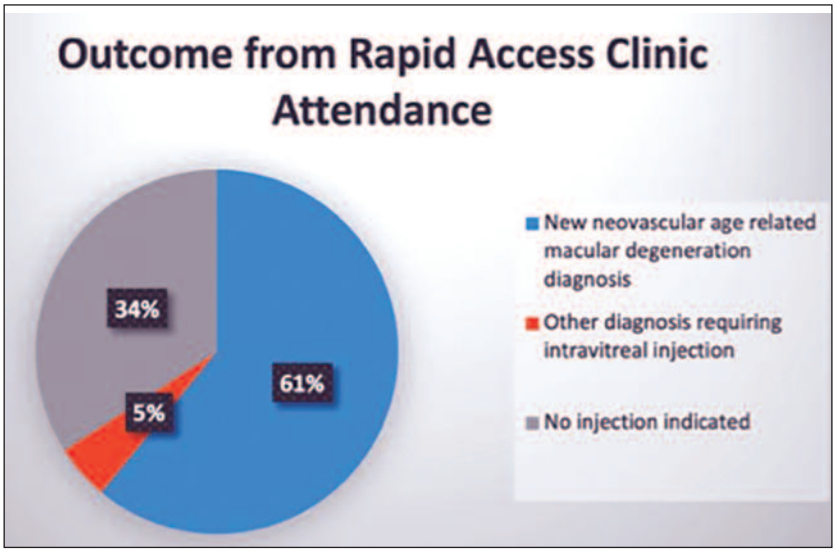

Figure 1:
percentage breakdown of the outcome from patients who attended the Rapid Access Clinic

Of the 25 patients, 88% (22/25) successfully were triaged by EED to be seen in the RAC for review and receive intravitreal injection within two weeks of primary referral which is highlighted below in figure 2. Only 3/25 cases did not met the two week cut-off recommended by the RCOphth. In these cases there were differentiate factors contributing to that including contraindication second to active infection and two atypical cases requiring further imaging in clinic.

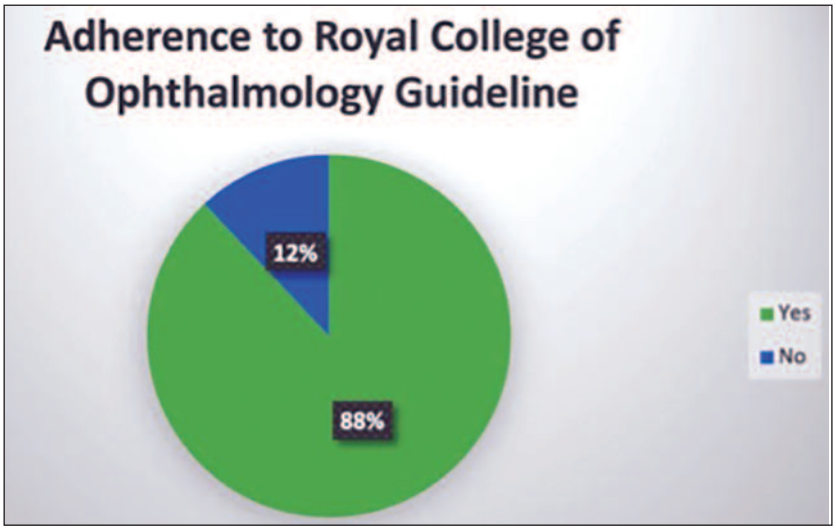

Figure 2:
percentage breakdown of patients receiving intervention within two weeks of suspected neovascular age related macular degeneration

Conclusion:
The RAC is a very useful and efficient resource for the early detection and treatment of nAMD. Unfortunately 34% of all patients who attended did not require intravitreal therapy so there still remains room to improve the service to be more selective for high clinical suspicion of nAMD that will require treatment.

A Case of Retinal Detachment Due to Myopic Traction Maculopathy Treated with Macular Buckle Surgery

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Objectives:
Surgical management of macular detachment due to myopic traction maculopathy is challenging, with high rates of failure. While pars plana vitrectomy can relieve vitreoretinal traction, it does not address the underlying staphyloma. We present a case of macular detachment in a patient with a posterior staphyloma treated with a macular buckle.

Methods:
Case report

Results:
A 57 year old man with high myopia presented with left sided progressive blurring of his central vision. On examination his visual acuity was 6/24. Fundoscopy and optical coherence tomography (OCT) showed myopic macular schisis with a posterior staphyloma. The patient was observed. One year later, visual acuity had dropped to counting fingers and examination showed a macular detachment over the staphyloma, with an associated macular hole. He underwent pars plana vitrectomy with internal limiting membrane peeling and inverted flap with C2F6 gas. At post-operative review, the macular hole was closed, however, the posterior pole detachment remained. Six weeks after the initial procedure, the patient underwent left macular buckle surgery. The macular buckle (AJL Ophthalmic) was positioned with transillumination and visualised with the aid of a 27G chandelier. Post-operative OCT imaging has shown gradual resolution of the macular detachment. Eight months post-operatively his visual acuity is 6/18.

Conclusion:
Though technically challenging, this case demonstrates the efficacy of macular buckle surgery for posterior pole detachments associated with staphyloma. Recent publications have shown favourable outcomes for macular buckle with or without vitrectomy in highly myopic eyes with foveoschisis or macular detachment. A review of 31 studies in myopic traction maculopathy showed much higher retinal reattachment and macular hole closure rates in patients who underwent macular buckling compared to vitrectomy, as well as lower re-operation rates.

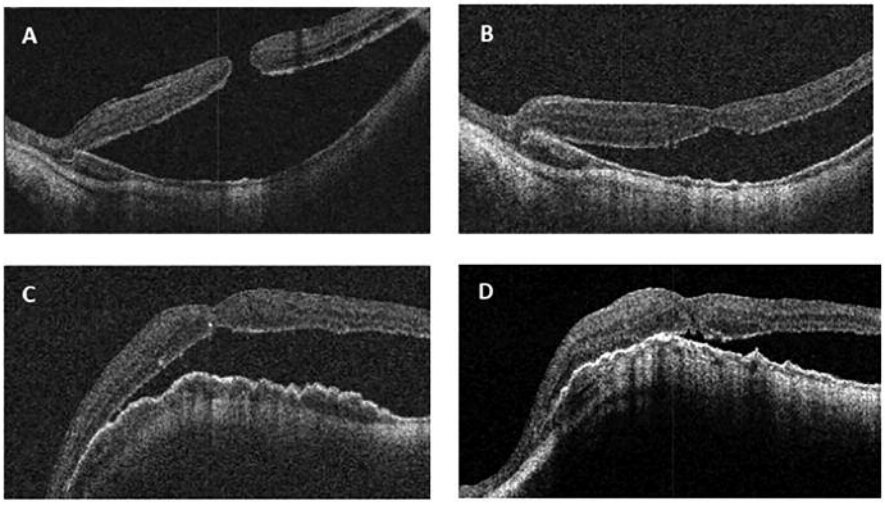

Figure 1: OCT images of the left macula
(A) Pre-operative OCT showing macular hole, posterior staphyloma and retinal detachment (B) Post-PPV membrane peel image showing macular hole closed but retinal detachment remaining. (C) OCT six weeks post macular buckle showing buckle in good position with retinal detachment remaining (D) OCT eight months post-op showing almost complete resolution of the retinal detachment with a clear reduction of subretinal fluid.

Timing of Surgery and Visual Outcomes in Primary Rhegmatogenous Retinal Detachment

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Objectives:
Rhegmatogenous retinal detachment (RRD) is a sight threatening condition that requires prompt surgical repair. Traditionally, the urgency of surgery for RRDs was governed by whether the macula was attached or not at presentation, with guidelines advising that 'mac-on' detachments should undergo repair within 24 hours, while those 'mac-off' could be delayed and repaired within 72 hours. More recently, it has been shown that patients who are only recently 'mac-off' do much better with earlier surgical repair. We wished to audit our retinal detachment repairs, looking specifically at timing of surgery for mac-on versus mac-off detachments, and the resulting visual outcomes.

Methods:
A retrospective chart review was carried out looking at the outcomes of primary RRD repair carried out by a single vitreoretinal surgeon in University Hospital Waterford.

Results:
Data was available for 28 patients who underwent primary RRD repair. One patient who had a chronic detachment was excluded from the analysis. 44% cases were mac-off. 92.5% RRDs were repaired via vitrectomy, the remainder were repaired with a scleral buckle. 88.4% cases were re-attached with a single procedure. Mean time from diagnosis to surgery was 21 hours. This was shorter for mac-on detachments than mac-off (18.5 versus 23.7 hours). Mean post-op PHVA was 0.23 for mac-on detachments and, 0.41 for mac-off. 50% mac-off cases were repaired within 24 hours of presentation. 92% were done within 48 hours. Mac-off detachments that were repaired within 24 hours had better mean post-operative PHVA than those repaired after 24 hours (0.31 vs 0.49), however this was not statistically significant (p=0.37). Visual success, defined as post-operative PHVA less 0.3 logmar or better, was achieved in 80% mac-off detachments that presented within 0-2 days of visual loss, and 40% that presented 3-4 days after vision loss. 92% cases were diagnosed between 9am-5pm, however, 32% surgical cases were commenced after 5pm. Patients who presented on a Monday were likely to have their operation quickest (mean time 3.4 hours from diagnosis to theatre). In contrast, patients who presented on a Tuesday waited the longest for their operation (mean time 39.7 hours).

Conclusion:
Mac-off retinal detachments can achieve an excellent visual outcome when repaired early. A large prospective study in the UK showed that duration of central visual loss was the most important modifiable risk factor affecting visual success, with 68% cases achieving visual success if the duration of central visual loss was less than 48 hours. In our study, mac-off retinal detachments that were repaired within 24 hours of presentation achieved better visual acuity post-operatively than those repaired later. Our study was small, and perhaps with a larger sample size our findings would have been statistically significant. Our study also highlighted the limited access to theatre for emergency eye cases in a general tertiary hospital. Of note, our vitreoretinal surgeon's scheduled theatre list took place all day Monday, with some additional access to theatre for emergencies on a Friday afternoon.

Radial Keratotomies and Primary Open Angle Glaucoma – A Case of Keeping Focus under Pressure

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Objectives:
A 61 year old male attended the glaucoma outpatient clinic complaining of fluctuating vision in both eyes throughout the day. His background history was significant for bilateral radial keratatomies for high myopia. Anterior segment topography (OCULUS Pentacam®) demonstrated fluctuating flat keratometry (K1) and steep keratometry (K2) values throughout the day.

Methods:
Intraocular pressure (IOP) was uncontrolled in right eye (26mmHg) and HVF24-2 testing demonstrated visual field loss progression in the right eye despite maximal pharmacological IOP lowering drop therapy and bilateral SLT laser procedures Results: The patient underwent a combined right eye Preserflo Ab Externo Microshunt (Santen) with the anti-metabolite Mitomycin C alongside right eye phacoemulsification and intraocular lens implantation procedures. Post operatively, the patient experienced several complications including cystoid macular oedema, anterior capsular contraction syndrome, as well as the Preserflo implant becoming blocked with capsular material.

Six months post operatively, IOP was 8mmHg in the right eye, biometry results demonstrated no significant fluctuation in K values throughout the day and subjective visual fluctuations subsided in the right eye.

Objectives:
Diurnal fluctuations in IOP may contribute to diurnal refractive changes in patients following RK surgery. Significant lowering of IOP via MIGS filtration surgery resolved refraction fluctuations. POAG progression in this patient may be halted by attaining adequate IOP.

Orbital Tumor – A Case Series

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Objectives:
A patient presenting with an orbital mass can have a variety of etiologies and necessitate a careful clinical examination, investigation and history-taking. The causes may vary from benign lesions to malignant, life-threatening neoplasms that require urgent management. We present a case series of such interesting orbital tumors, one of whom presented to the Thyroid Eye Clinic at the Royal Victoria Eye and Ear Hospital. The Thyroid Eye Clinic is a dedicated clinic for patients presenting with signs and symptoms of Thyroid Eye Disease. Since the typical presentations of both thyroid eye disease and orbital tumor are usually proptosis along with visual acuity changes and optic nerve dysfunction; the patient was referred to the Thyroid Eye Clinic for further management.

The most common origins of orbital tumors vary based upon the presenting age of the patients, with metastases being the common cause in adults especially to the posterior part of choroid, arising from breast, lung, prostate, melanoma, carcinoid, GI, renal cell, neuroblastoma, and rhabdomyosarcomas. Primary orbital melanoma is remarkably rare, accounting for 1% of all orbital tumors and less than 1% of all primary orbital tumors.

Presenting symptoms can be highly variable and may change based on the specific type of tumor that has metastasized, such as limited ocular motility, followed by globe displacement/proptosis, blepharoptosis, palpable mass, changes in vision, pain, visible mass, enophthalmos, and diplopia.

Methods:
Patient's presenting with a sudden onset of proptotic eye, gets an urgent imaging done. Although MRI is better for identifying soft tissue defects, CT orbit is typically performed for initial imaging, especially for metastasis. Other investigations can vary depending on the history and clinical examination findings.

Results:
The biopsies of patients presenting with orbital involvement showed an orbital melanoma in an otherwise healthy man, metastatic orbital involvement in a known case of small cell lung cancer and squamous cell orbital tumor in a patient with thyroid cancer.

Conclusion:
To follow (data is being gathered).

White Retinal Tumour

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Objectives:
Background – A six-year-old boy was referred with reduced vision in his left eye, following school vision screening. He was a healthy child born at term with no family history of eye disease.

On examination, his visual acuity was 6/6 in the right eye and counting fingers in the left eye with a +2 left afferent pupillary defect. Anterior segment examination was normal. Fundus exam of the left eye showed an elevated creamy mass at the macula, with extensive exudation in the temporal peripheral retina and associated subretinal fluid. There was no vitritis, vasculitis or optic nerve swelling. The right fundus was normal.

Methods:
The main concern was to rule out retinoblastoma. He underwent CT orbits which showed no calcification of the macular lesion. An examination under anaesthetic and fluorescein angiography was performed which showed capillary non-perfusion

and drop out temporally but the absence of 'light-bulb' telangiectasia, a classic feature of Coats disease. B-scan showed a subfoveal nodule, a sign of chronicity. OCT demonstrated that the lesion was subretinal.

Haematologic investigations include Toxocara serology – negative, and toxoplasma serology – negative. Genetic investigations for Familial exudative vitreoretinopathy (FEVR)– FZD4 (frizzled class receptor 4) are awaited. Haematology consultation is pending to assess for Dyskeratosis congenita/Telomere disorders.

Results:
The working diagnosis is of exudative retinopathy or 'Coats-like' retinopathy in view of the lack of telangiectasia. Based on Shields Classifications of Coats disease he has stage 3A1 disease – extrafoveal subtotal exudative retinal detachment. He will be treated with argon laser to areas of retinal non-perfusion. The aim of treatment is to prevent neovascularisation which could progress to neovascular glaucoma and a blind painful eye.

Conclusion:
The subfoveal gliotic nodule of Coats disease represents a secondary reaction to chronic retinal injury from vascular leakage. It can simulate Retinoblastoma so a CT orbit to look for calcification is essential. This gliosis or scarring suggests a poor visual prognosis.

Coats disease can mimic conditions with life-threatening associations such as telomere disorders and genetic implications such as FEVR so referral to a Paediatrician and genetic workup is recommended.

The mainstay of treatment remains retinal laser to telangiectasia and areas of non-perfusion. Intravitreal anti-VEGF and periocular steroids may be used as an adjunct to reduce exudation and allow more precise laser. They should be used judiciously however as steroid carries the risk of cataract and raised intraocular pressure and anti-VEGF may increase fibrosis.

Improving Sustainability of Diabetic Retinopathy Screening

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Objectives:
Combining data from multiple variables measured in individuals creates a prognostic model to stratify individuals based on risk for development of a particular outcome. Duration of diabetes and glycemic control are associated with progression of diabetic retinopathy (DR) to a stage that referral to an ophthalmologist is appropriate to minimize risk of visual morbidity through timely ophthalmic treatment. Associations of risk of progression with prior retinopathy severity, glycaemic parameters, hypertension, body mass index (BMI), and dyslipidemia vary between ethnic groups and populations.

Methods:
Part 1 - Patients' data from primary care systemic management health checks undertaken every four months was combined with colour fundus imaging outcomes categorised by grading criteria of National Screening Programme for Diabetic Retinopathy used in England and Wales undertaken at 12- month intervals. By use of a priori knowledge, data driven analysis can be used to establish weight (or coefficient) of each predictor variable.

Part 2 - Inputting into pre-existent prediction models developed in Iceland and Gloucester (England) involved taking a linear combination of the published coefficients from the models and the corresponding variables in our dataset at the last systemic visit before the index screening. The first two recorded screening episodes for an individual were used to define the risk groups. We refer to the second recorded retinal screening episode as the "index" screening, after which, follow-up commenced for all models. No further measurements of systemic variables were required in the risk calculation after the index screening and commencement of the follow-up period. Patients were included in the cohort only if they had one of three categories of DR indicating no or mild retinopathy at both of the two eye screening episodes (index-1, index): i) No DR in either eye; ii) mild DR in only one eye; iii) mild DR in both eyes.

A sub-cohort of 939 people from the 2770 was followed prospectively to compare the performance of the four different risk prediction models (three from Gloucester and one from Iceland) Classification accuracy involved using a classification model to make a prediction for each example in test dataset. Predictions were compared to the known outcomes for those examples in the test set.

Results:
High HbA1c, systolic BP and triglycerides were all associated with increased risk of progressing to RDR, whereas high BMI and diastolic BP were associated with reduced risk in this Irish population.

The presence of any DR (irrespective of how minimal) when entering the cohort, when compared with no overt retinopathy, markedly increased the risk of RDR, with a four-fold increased risk in people with R1, M0 when compared with those with R0, M0. Using data from a longitudinal cohort of people with T2D established in Ireland we found the risk prediction models tested, developed in Iceland and Gloucester, had an acceptable performance with an AUC of ~ 0.70 or above. This signifies that there would be a >70% probability that a randomly selected subject from the screening cohort who did in fact develop RDR would have been allocated to the higher risk score category by each of the models.

Conclusion:
This offers the means to improve cost-efficiency in screening by reducing screening frequency for those at low risk, thereby creating capacity to increase screening frequency for high risk cases.

Safety and Effectiveness of Intravitreal Dexamethasone Implant for the Treatment of Refractory Cystoid Macular Oedema in Galway University Hospital

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Objectives:
The aim of this study is to assess the real-life effectiveness and safety of intravitreal Ozurdex in an Irish setting. Ozurdex is an intravitreal dexamethasone implant that is used for the treatment of macular oedema secondary to retinal vein occlusion and diabetic macular oedema.

Methods:
This was a retrospective observational study of adult patients in University Hospital Galway who received an intravitreal dexamethasone implant (Ozurdex) for the treatment of cystoid macular oedema secondary to diabetic eye disease or retinal vein occlusion. The main outcome was the mean change in best-corrected visual acuity 3-6 months after the treatment.

Results:
36 patients were included in the study. Overall, there was a 1.66 mean letter gain (SD 11.8) 3-6 months post-treatment. The proportion of patients who gained >10 letters was 15.6%. The mean reduction in CST was 110.6um (SD 255.7), and in the linear regression analysis, no variables were found to be significantly associated with a change in visual acuity. In terms of adverse events, 14.3% of patients had significant cataract progression and 20.6% of patients had a significant rise in IOP following intravitreal Ozurdex implant.

Conclusion:
Intravitreal Ozurdex was found to be safe and effective, supporting it as an appropriate second-line treatment in patients with refractory macular oedema secondary to diabetic eye disease and retinal vein occlusion. Further studies should be carried out to evaluate the possible predictors of visual acuity outcome.

Measuring Outcomes in Lamellar Corneal Transplantation

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2RCSI Professorial Unit, Royal Victoria Eye and Ear Hospital, Dublin.

Objectives:

The aim of this study was to compare the improved visual acuity outcomes seen in keratoconus (KC) patients with DALK in relation to published standards.

Methods:

This was a retrospective cohort study of KC patients who had undergone DALK corneal transplantation at the Royal Victoria Eye and Ear Hospital in Dublin, Ireland. Retrospective chart reviews were conducted on DALK recipient KC patients (2016-2022). Key outcome data included post-op visual acuity (VA) and post-op intraocular pressure (IOP), graft complications, post-op refraction, post-op corneal topography keratometry, and treatment drops.

Results:

There were 29 cases (eyes) operated on. Mean age was 33.2 years. Specific DALK techniques included successful big bubble (65.5%) or manual dissection (34.5%). 1 case (3.4 %) of corneal graft failure was recorded in this cohort. 57.1% were seen to have a better Best Corrected Visual Acuity (BCVA) post op.

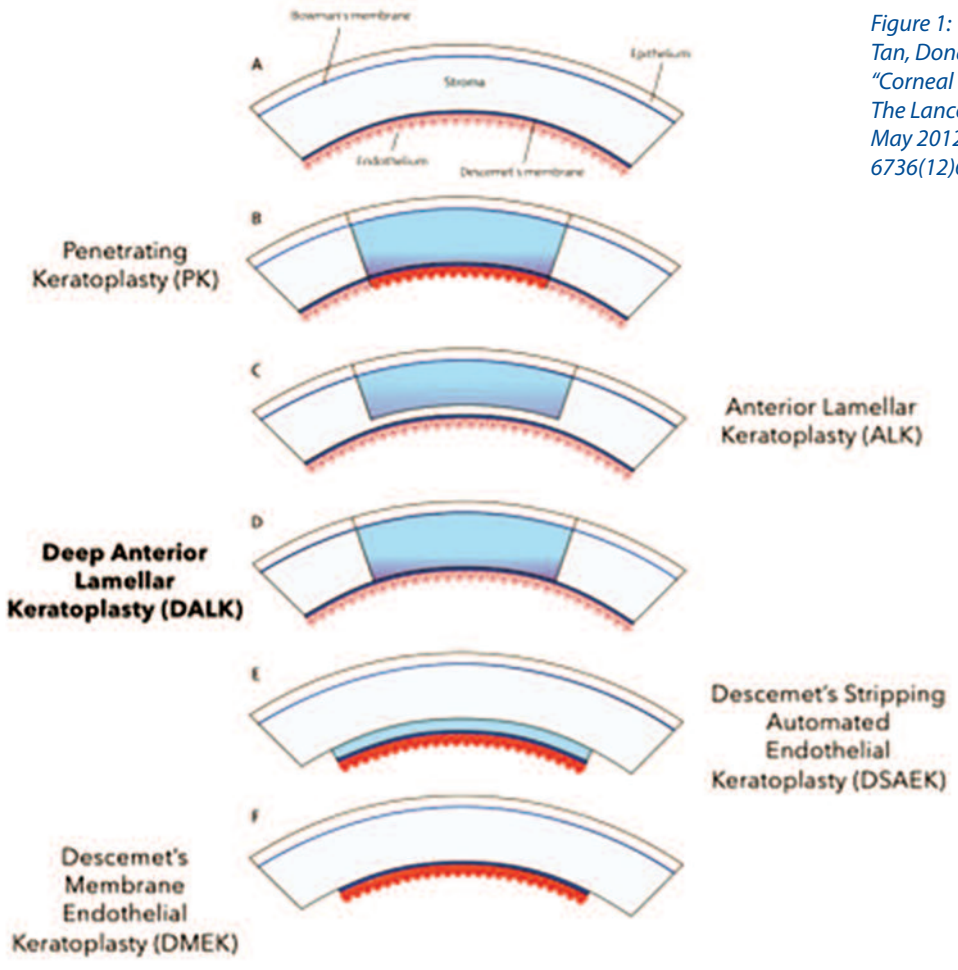
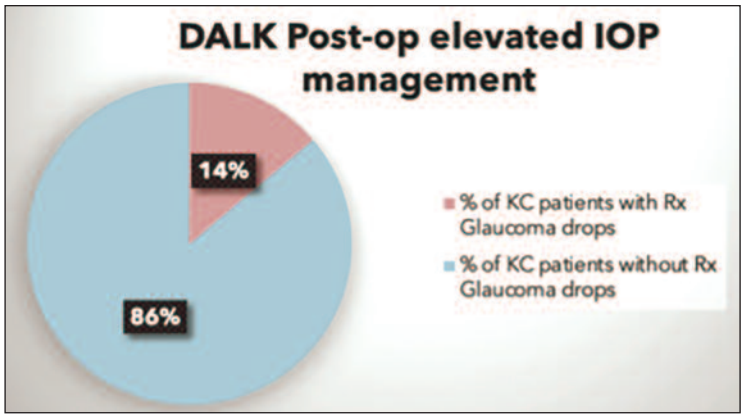


Figure 1:
Tan, Donald TH, et al. "Corneal Transplantation." The Lancet, vol. 379, no. 9827, May 2012, pp. 1749–1761, 10.1016/s0140-6736(12)60437-1. Accessed 26 Oct. 2019.



Decimal/ LogMAR(%)	KC patients (%) Initial post-op	Latest post-op: ranging from (1 month - 48 months)
CF-NP/1.8-4.0	28	3
0.02-0.1/1.0-1.7	31	7
0.13-0.2/0.7-0.9	24	10
0.25-0.32/0.5-0.6	17	31
0.4-0.5/0.3-0.4	0	21
0.63-0.8/0.1-0.2	0	14
≥1.0/≤0.0	0	14

Corrective visual aid outcomes	KC patients (%)
MSE </= 2D and Astig </= 4D (Suitable for Glasses)	13
MSE >/= 2D and Astig </= 4D (Suitable for Soft Spherical Lenses)	67
MSE </= 2D and Astig >/= 4D (Suitable for Rigid Contact Lenses)	0
MSE >/= 2D and Astig >/= 4D (Suitable for Rigid Contact Lenses)	20

Conclusion:
Some positive VA trends can be seen in DALK recipient keratoconus patients from this cohort. However, more cases with longer follow up periods will be needed for more reliable data as it relates to VA outcomes.

Evaluation of New Onset Neovascular Age-Related Macular Degeneration at Sligo University Hospital

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Objectives:
(1) To evaluate if patients with neovascular AMD (nAMD) receive intravitreal injection (IVI) within two weeks of referral date.
(2) To analyse eye care specialist referral patterns for patients with nAMD.

Methods:
Retrospective study of all patients with who received IVI for the first time in either eyes with a diagnosis of nAMD at Sligo University Hospital between 1st September to 31st December 2022. Patient demographics were retrieved from our electronic patient record Medisoft and cross checked clinical notes for referral data.

Results:
Over the study period of four months, 49 patients were diagnosed with nAMD in either of their eyes. Of which, 33 patients (67.3%) presented with first eye and 16 patients (32.6%) are already in service either under observation or receiving active treatment for the fellow eye. The mean time from first hospital encounter to treatment was 14.5 days for those patients already in service and 16.1 days for first eye which increases to 69.7 days from referral date to treatment date. Referral source altered time to treatment with direct referral from optometrists to eye casualty being quickest with mean time from referral to treatment of 14.4 days versus optometrists referral to OPD then to treatment of 64.2 days. Time between referral from DRS and other ophthalmologists to treatment were 23.3 days and 27.3 days respectively. Patients who had FFA experienced an extra 10 day delay between referral to treatment (50.3 days without FFA compared to 60.3 days with FFA).

In this audit, 16 patients (32.7%) met the Royal College of Ophthalmologists guideline and received an intravitreal injection within two weeks of referral date.

Conclusion:
Age-related macular degeneration (AMD) and it's late phenotype neovascular AMD (nAMD) is the most common cause of visual impairment in the older population. Permanent severe vision loss is almost inevitable if untreated. Current guidelines from the Royal College of Ophthalmologists recommends treatment with IVI within two weeks of referral. OCT can be employed as sole investigation to detect nAMD when there is no ready access to confirmatory tests such as OCT-A or FFA to avoid delay in receiving first treatment within 2 weeks of diagnosis. Previous audit performed in 2016 has an average of 35 days between referral to treatment (no difference found between referral source/pathway) and the newly designed pathway allows patients to be seen in eye casualty and receive prompt treatment within 2 weeks (mean 14.4 days) however some optometrists may not be aware of such pathway thus adding unnecessary delay (mean 64.2 days). Communication with key stakeholders such as optometrists, GPs, nursing staff and administrative staff are needed to discuss audit findings, explore potential changes/challenges in practice and refine referral pathway accordingly.