



Atlantic Corridor Medical Student Research Conference

University College Cork
NUI Galway

Atlantic Corridor Medical Student Research Conference 2017

Brookfield Health Sciences Complex
University College Cork
November 2nd



School of
Medicine



NUI Galway
OÉ Gaillimh

Atlantic Corridor Medical Student Research Conference 2017

Welcome Message from the Local Organising Committee



Dear Friends and Colleagues,

On behalf of the local organising committee, it is an honour to welcome you all to the 4th Atlantic Corridor Medical Student Research Conference. This intervarsity undergraduate research showcase will provide an opportunity to enjoy presentations on a diverse range of clinical and translational medical research projects completed across two of the 'Atlantic Corridor' medical schools – UCC and NUIG. The programme includes a stimulating mixture of oral and poster presentations, in addition to a plenary lecture by one of Ireland's most prominent clinician scientists.

We hope that all visiting students and staff enjoy the conference programme, as well as the hospitality of UCC staff during the event.

We would like to acknowledge the generous support of UCC School of Medicine's Research and Postgraduate Affairs Committee for providing support for this event.

Dr. Eileen Duggan & Dr. Colm O'Tuathaigh

Medical Education Unit, School of Medicine, UCC

Atlantic Corridor Medical Student Research Conference Schedule 2017

Brookfield Health Sciences Complex
University College Cork
November 2nd

Schedule – At a Glance

Oral Presentations in Rm G11

- 09:30 – 10:00 Registration & Refreshments (*served in Jennings Gallery*)
- 10:00 – 10:15 Opening Address by Dr. Deirdre Bennett, Head of Medical Education, UCC
- 10:15 – 11:15 Oral Presentations I
Session Chairs: Dr. Eileen Duggan [UCC], Dr. Roisin Dwyer [NUIG]
- 11:15 – 11:30 Coffee, *Jennings Gallery*
- 11:30 – 12:30 Oral Presentations II
Session Chairs: Dr. Eileen Duggan [UCC], Dr. Roisin Dwyer [NUIG]
- 12:30 – 13:30 Lunch & Poster Session, *Rm 2.63*
- 13:30 – 14:15 Oral Presentations III
Session Chairs: Dr. Eileen Duggan [UCC], Dr. Roisin Dwyer [NUIG]
- 14:15 – 15:05 **Plenary Lecture – Rm G11**

“Minimizing drug-related adversity in multi-morbid older people: from theory to clinical practice”

Professor Denis O’Mahony
Department of Medicine
Cork University Hospital

15:05 – 15:20 Prize-giving and Closing Address by Dr. Liam Fanning,
Chair of Research and Postgraduate Affairs Committee,
School of Medicine, UCC

Oral Presentations I – Rm G11

10:15 **Presenter:** Stephen O'Brien (NUIG)

Title: Haemocompatibility of a polyurethane-based polymer
for use in prosthetic heart valves

10:30 **Presenter:** Ruby Ying-Ju Chang (UCC)

Title: Curricular priorities for dementia education for
General Practitioners: A Delphi consensus study

10:45 **Presenter:** Ciara Ryan (NUIG)

Title: Contemporary review of bypass surgery in the
endovascular era

11:00 **Presenter:** Gerard Finn (UCC)

Title: The iodine status of pregnant women attending Cork
University Maternity Hospital

Oral Presentations II – Rm G11

11:30 **Presenter:** Nishant Theva Raj (NUIG)

Title: Transcatheter tricuspid valve intervention – is there a
clinical need?

11:45 **Presenter:** Daniel Garcia (UCC)

Title: Superior capsular reconstruction for treatment of
irreparable rotator cuff tears: early clinical results

12:00 **Presenter:** Yvonne Fahy (NUIG)

Title: New toys for the neurologist: application of sensor technology for monitoring Parkinson's disease

12:15 **Presenter:** Louise Kelly (UCC)

Title: Does diabetic ketoacidosis at diagnosis of Type 1 Diabetes Mellitus predict poor long-term glycaemic control?

Oral Presentations III – Rm G11

13:30 **Presenter:** Chloe Conlon (NUIG)

Title: Different forms of resilience- a key predictor of functioning and potential therapeutic target for those with chronic mental illness

13:45 **Presenter:** Cian Duggan (UCC)

Title: An exploration of the effectiveness of an educational intervention on the use of personal protective equipment in orthopaedic theatres

14:00 **Presenter:** Maleeha Virk (NUIG)

Title: Cancer cell engraftment and scattering is enabled by cell cycle progression

Poster Presentations – Rm 263

P1 **Incidence, associations, and impact of antibodies of undetermined significance in solid-phase technology**

M. Bourque¹, R. Barty², Y. Liu², N. Heddle², M. Zeller^{2,3,4}

¹ School of Medicine, University College Cork; ² McMaster Centre for Transfusion Research, McMaster University, Hamilton, Canada;

³ Department of Medicine, McMaster University, Hamilton, Canada;

⁴ Canadian Blood Services, Ancaster, Canada.

- P2 **Antimicrobial prescribing and hospital discharge practices in cases of suspected meningitis and encephalitis**
- E. Walsh¹, P. Randall², E. de Barra²
¹ *National University of Ireland, Galway;* ² *Imperial College Healthcare NHS Trust, London, UK*
- P3 **To evaluate the use and effectiveness of Mycophenolate Mofetil (MMF) in patients with systemic autoimmune rheumatic diseases- a retrospective cross- sectional study**
- W.Y. Poh¹, J. Ryan², G. Murphy²
¹ *School of Medicine, University College Cork;* ² *Department of Rheumatology, Cork University Hospital, Cork*
- P4 **Vitamin D levels in Irish children with Type 1 Diabetes Mellitus: A cross-sectional study**
- N.D.S. Md Nasir¹, H. Burke², R. Geoghegan^{2,3}
¹ *School of Medicine, National University of Ireland, Galway;* ² *Diabetes Centre, University College Hospital Galway;* ³ *Department of Paediatrics, School of Medicine, National University of Ireland, Galway*
- P5 **Is obstetric mode of delivery associated with childhood cognitive ability?**
- M. Hanrahan¹, A. Khashan^{2,3}, L. Gibson⁴
¹ *School of Medicine, University College Cork, Cork;* ² *School of Public Health, University College Cork, Cork;* ³ *The Irish Centre for Fetal and Neonatal Translational Research (INFANT), University College Cork, Cork;* ⁴ *Department of Paediatrics and Child Health, University College Cork*
- P6 **A retrospective analysis to assess the frequency of “Embolic Strokes of Undetermined Source” at St. Luke’s Hospital, Kilkenny**
- K. Marsden¹, E. Somers², P. Cotter²
¹ *Graduate Entry Medical Program, University of Limerick, Ireland;* ² *St. Luke’s Hospital, Kilkenny*
- P7 **Microanatomy of the thumb carpometacarpal (1CMC) joint**
- N. Ní Chorráin¹, P. Lalor², M. Canney², I. O’Brien², B. Wilkins², D. Connolly³
¹ *School of Medicine, NUI Galway, Galway;* ² *Anatomy Department, NUI Galway, Galway;* ³ *Engineering Department, NUI Galway Galway.*

- P8 **Bone mineral density and fracture risk in Ankylosing Spondylitis: A meta-analysis**
C. Pray¹, N.I. Feroz², N.N. Haroon³
¹ *School of Medicine, University College Cork, Cork;* ² *Royal College of Surgeons in Ireland, Dublin;* ³ *Northern Ontario School of Medicine, Sudbury, Canada*
- P9 **Development of a Discrete Choice Experiment to determine patient's preferences for the treatment of prostate cancer: a focus group discussion**
E.A.M. Umar¹, R. Corcoran², F. Sullivan³, D. O'Donovan³
¹*NUI Galway;* ²*Department of Public Health, Health Service Executive, West;* ³*Prostate Cancer Institute, NUI Galway, Galway*
- P10 **Diagnostic challenges in melanoma: going back to (morphology) basics**
B. Marzario¹, C. Murray², L. Feeley², D.G. Power³, C. Heffron²
¹ *School of Medicine, University College Cork;* ² *Department of Pathology,* ³ *Medical Oncology, Cork University Hospital, Cork*
- P11 **The impact of Diabetes Mellitus on bone marrow progenitor cell number and proliferative capacity**
A. Keane¹, C.G. Murphy², T. O'Brien^{1, 2}, C.M. Coleman¹
¹*School of Medicine NUI Galway;* ² *University Hospital Galway, Galway*
- P12 **Evaluation of the Personal and Life Skills (PALS) Programme for adolescents with high-functioning Autism Spectrum Disorder (ASD)**
A. Collery¹, A. Dorrian Buckley¹, L. Crowley², A. Ryan³
¹*School of Medicine, University College Cork;* ² *Shine Centre Carrigaline, Cork;* ³ *Department of Paediatrics and Child Health, and Cork University Maternity Hospital, Cork*
- P13 **Antiplatelet versus anticoagulation therapy in extracranial cervical arterial dissection**
G. Doherty¹, N. Hynes, W. Tawfick, S. Sultan, Á. DeBhulbh¹
¹ *School of Medicine, National University of Ireland, Galway; Western Vascular Institute, University College Hospital, Galway; Galway Clinic, Royal College of Surgeons of Ireland, Galway*

- P14 **A study of the correlation between the verbal Months Backwards Test (MBTv) and a novel computerised version (MBTc) in a population with mixed neuropsychiatric conditions**
M. Mulligan¹, L. Lally ², G. McCarthy ¹, A. Dimitrios², D. Meagher³
¹ School of Medicine, National University of Ireland Galway, Galway; ² Sligo University Hospital, Sligo; Graduate Entry Medical School, University of Limerick, Limerick
- P15 **An analysis of complex aortic surgery over a 10-year period in a tertiary cardiothoracic centre**
J. Fish¹, J. Hinchion²
¹ School of Medicine, University College Cork, Cork; ² Department of Surgery, Cork University Hospital, Cork
- P16 **Factors affecting time to reach target in patients with early rheumatoid arthritis (ERA): an observational cohort study**
T.F. Tuan Idzawi, B. McGowan, N. Harrington, C. Silke, B. Whelan
School of Medicine, National University of Ireland Galway, Galway
- P17 **The road to consultancy: what it takes to get to the top**
N. Van Den Berg ¹, N. Hogan², M. Joyce²
¹ School of Medicine, National University of Ireland Galway, Galway; ² Department of Colorectal Surgery, University Hospital Galway, Galway
- P18 **Analysis of comparable home/clinic blood pressure readings in the Leanbh population**
E. Roche ¹, Y. Yin Lim ^{2, 3}, L.C. Kenny ^{2, 3}
¹ School of Medicine, University College Cork, Cork; ² Department of Obstetrics and Gynaecology, Cork University Hospital, Cork; ³ The Irish Centre for Fetal and Neonatal Translational Research (INFANT), University College Cork, Cork
- P19 **Mild traumatic brain injury biomarkers and testing methods for point-of-care assessment**
C. Blake¹, D. Gonzalez², J. McMahon³
¹ College of Medicine, National University of Ireland Galway, Galway; ² Department of Kinesiology, University of Waterloo, Waterloo, Ontario, Canada; ³ Galway Neuroscience, National University of Ireland Galway, Galway

P20 Maternal alcohol consumption during pregnancy and the risk of autism spectrum disorders in offspring

C. Gallagher¹, A. Khashan², F. McCarthy³, L.C. Kenny

¹ School of Medicine, UCC, Cork; ² Department of Obstetrics and Gynaecology, Cork University Hospital, Cork; ³ The Irish Centre for Fetal and Neonatal Translational Research (INFANT), University College Cork, Cork

P21 Glycosignature in healthy and degenerated human intervertebral disc

K. Joyce¹, I.L. Mohd Isa², A. Krouwels³, L.B. Creemers³, A. Pandit²

¹School of Medicine, ² Centre for Research in Medical Devices, National University of Ireland, Galway; ³ Department of Orthopedic Surgery, University Medical Centre Utrecht, Netherlands

P22 Knowledge, attitudes and behaviours of medical students towards sexual health

M. Murphy¹, C.A. Field²

¹ School of Medicine, National University of Ireland Galway, Galway; ² Health Promotion, School of Health Sciences, National University of Ireland, Galway

P23 Incidence of subsequent stroke in patients after attending the TIA clinic in Cork University Hospital

K. O'Brien¹, S. Cronin²

¹School of Medicine, University College Cork; ² Department of Neurology, Cork University Hospital, Cork

P24 Undergraduate research in medicine

N. Lang, R. Dwyer

Department of Surgery, Lambe Institute for Translational Research, School of Medicine, NUI Galway, Galway

P25 Investigations on bone morphometry and bone mineral density distribution (BMDD) among osteoarthritic (OA), osteoporotic (OP) and type 2 diabetic (DB) patients

S. Tio^{1,2}, E. Parle³, A. Behre⁴, L. McNamara³, J. Carey⁵

¹ School of Medicine, National University of Ireland Galway, Galway; ² Department of Cardiology, University Hospital Galway, Galway; ³ Biomedical Engineering, NUI Galway, Galway; ⁴ Lehigh University, Pennsylvania, USA; ⁵ Merlin Park University Hospital, Galway

P26

Using discrete choice experiments (DCEs) to untangle the use of incentives for recruitment in clinical trials: a pilot study

M.Y. Ho¹, A. Fox², C. Clarke³, P. Leahy⁴, D. Dahly⁴, D. Devane⁵, S. Duane⁶, P. Kearney⁴, J. Bourke⁷, A. Vellinga⁶

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P27

Disease-specific quality of life in children with recurrent acute Otitis Media and Otitis media with Effusion

F. Ibrahim, O. Fapohunda, I.J. Keogh
School of Medicine, NUI Galway, Galway

P28

A three center audit follow-up of 6-hour monitoring for administration related reactions during the first administration of subcutaneous (SC) trastuzumab

S. Karmali¹, B. Bird², D. O'Mahony³, M. O'Connor⁴, C. Murphy², S. O'Reilly¹, R. Galiauskas², N. Hughes², A. Kinneally²

¹School of Medicine, University College Cork, Cork; ²Bons Secours Hospital, Cork; ³Cork University Hospital, Cork; ⁴Waterford University Hospital, Waterford

Oral / Poster Abstracts

O1

Haemocompatibility of a polyurethane-based polymer for use in prosthetic heart valves

Oral

S. O'Brien, E. Sander, F. Sharif

School of Medicine, National University of Ireland Galway, Galway

Background & Objectives

An unmet clinical need exists for a prosthetic heart valve with long-term durability that does not require lifelong anticoagulation. In developing a polymer valve to fit this need, the aim of this project was to investigate the haemocompatibility of the polymer material in a physiologically representative in vitro environment.

Methods

Whole blood was collected from healthy consented volunteers (n=5) into a bag pre-filled with heparin. A comparative study was performed to assess the blood under four conditions: no exposure to the material, static and quasi-static exposure, and exposure in dynamic flow. After incubation, full blood counts were performed and haemolysis index was measured. PMN-elastase, β -thromboglobulin and TAT levels were quantified from blood plasma via ELISA. Platelet adhesion and morphology were analysed under scanning electron microscopy.

Results

There was no significant difference in erythrocyte count between groups. Platelet counts were decreased in the quasi-static group versus the true control but there was no significant difference in platelet count between the quasi-static control and sample (p=0.47). Haemolysis index remained within an acceptable clinical range in all groups. There was no significant difference in PMN elastase, TAT, or β -thromboglobulin levels under the different conditions (p=0.797, 0.943, 0.786 respectively). SEM showed some evidence of platelet adhesion to the material after blood exposure versus a control.

Conclusions

This study of the material shows initially promising results of hallmark haemocompatibility markers as per ISO 10993-4: medical materials in a blood contacting space. Results must be further validated with complement study and in vivo evaluation.

O2

Curricular priorities for dementia education for General Practitioners: A Delphi consensus study

Oral

R.Y.-J. Chang, A. Jennings, T. Foley

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Background & Objectives

General practitioners (GPs) play a pivotal role in the care of people with dementia, however, GPs would like further education and training in dementia care. To address this educational need a 12-week GP module in dementia care was designed.

Methods

A previously conducted educational needs analysis provided an initial list of potential topics. Clinical experts participated in an eDelphi survey and ranked these learning topics based on their clinical importance and relevance to general practice. Qualitative comments and new topic suggestions were also collected. Percentage agreement on topic was determined when consensus of greater than 70% was reached. 65 participants were invited to participate in the eDelphi.

Results

Response rate was 40% in the first round (26/65) and 92% in the second round (24/26). Respondents included GPs (n= 15), geriatricians (n=6), neurologists (n=2) and old age psychiatrists (n=3). Round 1 involved 41 topics, where 28 learning topics reached consensus for inclusion and 6 topics reached consensus for exclusion. 7 topics did not reach consensus and respondents suggested 5 additional topics for consideration. This gave a total of 12 topics for round 2. In round 2, 9 learning topics reached consensus for inclusion while consensus was not achieved in 3. These 3 topics were discussed at an expert panel meeting and were felt to be irrelevant to the focus of the study. In total, 37 topics were identified as essential for a dementia curriculum.

Conclusions

The list of topics identified through this study will be used to inform the development of a curriculum of a dementia module for GPs.

Contemporary review of bypass surgery in the endovascular era

Oral

C. Ryan^{1,2}, W. Tawfick^{1,2}, M. ElSherif², M. Curtin², N. Hynes³, S. Sultan^{1,2,3}

¹ School of Medicine, National University of Ireland, Galway; ² Western Vascular Institute, University College Hospital, Galway, Ireland. Graduate Entry Medical School, University of Limerick; ³ Galway Clinic, Royal College of Surgeons of Ireland, Galway

Background & Objectives

Despite the popularity of endovascular revascularisation, bypass procedures still play an important role in critical limb ischaemia (CLI) management. The aim was to compare outcomes of synthetic versus natural conduits. Primary endpoint is amputation-free survival. Secondary endpoints include clinical success, haemodynamic success, patency rates and overall survival.

Methods

Clinical details of patients undergoing lower limb bypass from 2008 to 2016 were reviewed. Outcomes of autologous vein bypass grafts were compared to those of synthetic conduits.

Results

Over 8 years, 623 patients were referred with CLI. 115 underwent bypass procedures. All procedures were performed for TASC C/D lesions. Seventy-four bypasses were performed using a synthetic conduit and forty-one using autologous vein. 96.7% of synthetic bypasses were above the knee and 90.6% of veins were below the knee. Demographics, vascular-related risk factors, lesion length and runoff grading were comparable in both groups. Postoperative major adverse cardiovascular events and major adverse limb events were similar in both groups. Immediate clinical improvement to Rutherford Category ≤ 3 was 88.2% in synthetic bypasses versus 70.3% in autologous veins ($p=0.022$). Hemodynamic success with ABI's improving by ≥ 0.10 occurred in 87.7% of synthetic bypasses versus 87.1% in vein bypasses ($p=1$). At five years, primary, assisted primary and secondary patency were 54.2%, 66.3%, 68.4% respectively. Amputation-free survival was 91.3% with synthetic grafts and 92.7% with veins ($p=0.671$). Overall survival was 62% for synthetic graft patients versus 65.9% with vein graft ($p=0.406$).

Conclusions

In patients where autologous veins are unavailable, synthetic bypass grafts still provide acceptable clinical outcomes, with comparable patency and amputation rates.

The iodine status of pregnant women attending Cork University Maternity Hospital

Oral

G. Finn¹, B. Maher¹, G. Boylan², J. Higgins³

¹School of Medicine, University College Cork, Cork; ²Irish Centre for Fetal and Neonatal Translational Research, University College Cork, Cork; ³Department of Obstetrics and Gynaecology, University College Cork, Cork

Background & Objectives

Iodine is an essential mineral used by the thyroid gland to produce thyroid hormones. Thyroid hormones regulate growth and metabolism and are essential for neurological development in the foetus during pregnancy and early life. Sufficient iodine intake in pregnancy is important because recent evidence suggests that even mild-to-moderate deficiency is associated with reduced verbal IQ and reading ability in the offspring. There is sparse data on the iodine status of pregnant women in Ireland and the iodine status of pregnant women in Cork has never been investigated.

Methods

Pregnant women attending Cork University Maternity Hospital for their booking visit and first ultrasound scan were asked to participate. 100 pregnant women were recruited to this cross-sectional study in July and August 2016. Each participant provided a spot urine sample for the measurement of urinary iodine concentration (UIC) and creatinine concentration. From the ratio of urinary iodine:creatinine an estimated 24-hour iodine excretion was calculated. Each participant also completed basic demographic information and a Food Frequency Questionnaire.

Results

50 of the women had a UIC below the limit of detection of 20µg/L. The remaining 50 had a median UIC of 69.30µg/L signifying that the group was iodine deficient as per World Health Organisation guidelines. The median estimated 24-hour iodine excretion of 118.28µg/L was also suggestive of iodine deficiency.

Conclusions

These findings are a public health concern and suggest a national investigation of iodine status in pregnancy is warranted to properly inform ante-natal advice on iodine intake.

Transcatheter tricuspid valve intervention – Is there a clinical need?

Oral

N. Theva Raj, D. Mylotte ²

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Background & Objectives

Severe tricuspid regurgitation (TR) is a frequently under-treated clinical problem. Surgical repair of the TR is associated with high mortality and therefore <1% of patients with severe TR undergo surgical intervention. The aim was to assess the prevalence, clinical and echocardiographic characteristics of patients with moderate or severe TR in those with systolic heart failure.

Methods

A retrospective review of the clinical notes and echocardiographic data of 462 patients registered with the Heart Failure Clinic at University Hospital Galway was performed. Echocardiographic criteria were adjudicated according to the recommendations of the European Association of Echocardiography. The data was collected in a dedicated database and standard statistical tests were performed.

Results

Among 462 patients, 160 (34.63%) were diagnosed with TR. Most (N=147) patients presented with mild/moderate TR, while 13 (8.13%) had severe TR. Patients with severe TR were more likely to suffer from atrial fibrillation (84.62%, $p=0.01$) and bundle branch blocks (53.85%, $p=0.04$), compared to patients with mild or moderate TR. Patients with severe TR also had significantly higher pulmonary artery systolic pressures (50.09 ± 15.87 versus 34.56 ± 12.31 , $p<0.0001$). All 13 patients with severe TR and 95.92% of patients with mild or moderate TR suffered from mitral regurgitation as well. The 13 patients with severe TR were deemed suitable for transcatheter tricuspid therapies.

Conclusions

There exists a significant proportion of patients with significant TR that remains under-treated and may be suitable for transcatheter tricuspid valve intervention.

Superior capsular reconstruction for treatment of irreparable rotator cuff tears: early clinical results

Oral

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Background & Objectives

Pain relief and functional improvement are variable with current non-arthroplasty techniques for treating massive, irreparable rotator cuff tears. Reverse shoulder arthroplasty may be a more reliable option but high complication rates in younger patients and in revision reverse arthroplasty are cause for concern. Superior capsular reconstruction recreates superior stability, therefore improving overall function of the shoulder joint by restoring the glenohumeral fulcrum. The aim was to assess outcomes of irreparable rotator cuff tears treated with superior capsular reconstruction (SCR) using a porcine dermal xenograft (DX Matrix).

Methods

Pre-operative and post-operative shoulder range of motion, American Shoulder and Elbow Surgeons (ASES) score, subjective shoulder value (SSV), and visual analogue score (VAS) for pain were measured. Data were collected retrospectively from electronic medical records on 20 SCRs performed by two surgeons between July 2015 and November 2016. Post-operative reviews occurred at 12 weeks, 24 weeks, 12 months, 18 months.

Results

Fifteen males and five females, mean age 66.47 years, underwent SCR. Mean follow up 7.4 months, range 3 – 18 months. Eight patients were pseudoparalytic pre-operatively; in six of these patients the pseudoparalysis was reversed after SCR, one patient was still pseudoparalytic at 12 weeks, and one 66-year-old patient remained pseudoparalytic at 24 weeks. His graft had failed on the humeral side and a revision SCR was performed. Six patients required subscapularis repair, but there was no significant difference in outcomes compared to patients who had an intact subscapularis. Overall, mean VAS improved from 7.44 pre-operatively to 1.72 post-operatively, $p < 0.0001$. Mean ASES Score pre-operatively was 32.57 and post-operatively 78.00, $p < 0.0001$. Subjective Shoulder Value improved from 32.5% on average pre-operatively to 70.0% post-operatively, $p = 0.001$.

Conclusions

SCR can alleviate the severe pain and disability from irreparable rotator cuff tears and give significant improvements in shoulder function. In patients unsuitable for reverse shoulder arthroplasty, SCR is a promising alternative.

New toys for the neurologist: application of sensor technology for monitoring Parkinson's disease

Oral

Y. Fahy¹, C. Clancy¹, P. Browne^{1,2,3}, T. Counihan^{1,2}

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Background & Objectives

Parkinson's disease (PD) is a progressive, neurodegenerative disorder which most patients experience fluctuations in motor symptoms. Fluctuations may not be apparent during standard clinical encounters. Patient diaries allow further collection of information, however, quite subjective. Emerging wrist-worn sensor technology has attempted to address this issue using objective, real-world monitoring of patients. The aim was to compare fluctuation recordings from commercially-available Parkinson's Kinetigraph (PKG) sensor with best clinical practice results to identify sensor's accuracy.

Methods

Following ethical approval, 36 patients consented to participate in this cohort study. UPDRS clinical motor examination divided patients into non-fluctuators(NF), possible-fluctuators(PF) or clear-fluctuators(F). Subsequently, patients wore PKG sensor for 6days. Each PKG generated a Fluctuation Dyskinesia Score(FDS), a validated composite movement score derived from an algorithm ($>12.8=F$; $<7.7=NF$). Statistical analysis using ANOVA and Pearson's correlation tests were performed using SPSS to compare FDS values with clinical data.

Results

73%(n=27) of participants were male, median disease duration 9.5(2-25years), mean age of n=17 was 67 ± 7 years. 47%(n=17) were clinically categorised as F, 22%(n=8) as NF. Mean FDS value was 9.5 ± 2 . Mean UPDRS was 30 ± 12 . Post-Hoc showed statistically significant mean difference of 3 between FDS of F and NF ($p<0.005$, 95% CI[0.79, 5.13]. Correlation between FDS and UPDRS had r-value 0.156($p=0.37$), thus not statistically significant. However, there was moderate correlation between UPDRS and disease duration (years) with r-value 0.417($p=0.02$).

Conclusions

Initial data shows statistical significance in the PKGs concordance with clinical assessments of the F and NF subgroups. PKG could potentially be useful for detecting PD motor fluctuations, however, further studies would be required using a larger cohort of patients.

Funding

School of Medicine Summer Research Scholarships, National University of Ireland, Galway.

Does diabetic ketoacidosis at diagnosis of Type 1 Diabetes Mellitus predict poor long-term glycaemic control?

Oral

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Background & Objectives

Diabetic ketoacidosis (DKA) is an acute, major, life-threatening complication of type 1 diabetes mellitus. This study aimed to determine 1) whether DKA at diagnosis of type 1 diabetes is associated with poor long-term glycaemic control; 2) to establish whether there are confounding factors which may impact the mode of presentation or subsequent glycaemic control.

Methods

This study was conducted via review of 102 patient files extracted from the Young Person's Diabetes Clinic at Cork University Hospital. Diabetic ketoacidosis was defined as a venous pH<7.3 or a bicarbonate level<15 mmol/L. Glycaemic control was measured using the average of the patient's three most recent HbA1C levels, a median of 11.5yrs post diagnosis.

Results

Data analysis revealed a significant association between DKA at diagnosis and absent honeymoon phase, $p=.017$. No significant difference in glycaemic control at follow-up was found between individuals with DKA at diagnosis and no DKA, $p >.05$. Certain sociodemographic factors were found to predict worse glycaemic control at follow-up: Individuals using recreational drugs and those reporting mental health difficulties were found to have higher levels of HbA1C at follow up ($p=.008$, $.002$ respectively) compared to individuals who did not.

Conclusions

Diabetic ketoacidosis at diagnosis of type 1 diabetes mellitus was shown to be associated with absent honeymoon phase in this study. Furthermore, individuals who utilise recreational drugs or have mental health difficulties had significantly worse glycaemic control at follow-up.

Different forms of resilience- a key predictor of functioning and potential therapeutic target for those with chronic mental illness

Oral

C. Conlon¹, A. Liston², D. Adamis²

¹ School of Medicine, National University of Ireland Galway, Galway; ² Department of Psychiatry, Sligo/Leitrim Mental Health Services, Sligo

Background & Objectives

Chronic mental illnesses challenge functioning with resilience buffering hopelessness. Resilience is central to the new movement of positive psychiatry which refreshingly is a strength based approach to mental health. Understanding resilience better may help identify those with lower functioning and prove an important target for rehabilitation. Aim: To establish which form of resilience (social-support, emotional-coping or situational-coping) is most important in attainment of higher functioning for people with Schizophrenia, Schizoaffective-Disorder or Bipolar-Disorder after controlling for factors like psychopathology.

Methods

Community-dwelling patients aged 18+ of Sligo/Leitrim area with Schizophrenia, Bipolar-Disorder or Schizoaffective-Disorder were approached in this ethically approved cross-sectional study. The scales used were Resilience Appraisal Scale (RAS), Global Assessment of Functioning (GAF) and Basic Psychiatric Rating Scale (BPRS). RAS has 12 items scored on a 5 point Linkert-Scale, it accessed the aforementioned resilience subscales with lower scores indicating higher resilience. GAF accessed functioning whilst BPRS measured psychopathology. Data analysis involved descriptive and linear regression with SPSS.

Results

132 approached, 107 agreed to participate, [mean age 47.91, (SD:13.73), 60 (56.1%) males]. The mean GAF was 59.33, (SD:16.12), mean BPRS 38.95 (SD:13.78), and the means of RAS-subcales were: social-support 1.79(SD:0.88), situational-coping 2.12 (SD:0.90) and emotional-coping 2.35 (SD:1.07). The significant predictors of general functioning were BPRS ($t=-7.776$, $p\leq 0.001$) and RAS-social-support ($t=-3.311$, $p=0.001$).

Conclusions

Higher functioning is achieved with lower psychopathology and better social support. The clinical implication is the development and realization of a social-support-network, which builds resilience, offers a promising therapeutic target for people with serious chronic mental illnesses.

O10

An exploration of the effectiveness of an educational intervention on the use of personal protective equipment in orthopaedic theatres

Oral

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Background & Objectives

Personal protective equipment (PPE) is an important tool in medicine. It helps to protect staff from harm in the form of infection and injury. Protocols exist in orthopaedic surgery for the use of PPE but are not always adhered to. The use of PPE can significantly reduce staffs' exposure to harmful radiation and infection. The aim was to observe the compliance with PPE followed by an educational intervention and then further observations to assess the efficacy of the intervention.

Methods

Questionnaires were distributed to orthopaedic surgeons and theatre nurses (subjects) and used to guide the educational intervention. 40 orthopaedic cases requiring fluoroscopic guidance were observed noting: count of available PPE, the use of lead aprons, thyroid guards, eye protection, radioprotective eyewear, radioprotective gloves and other details of each procedure. The intervention, a PowerPoint presentation was presented to four different groups to ensure that as many subjects as possible were given the intervention.

Results

Initial analyses indicated a significant ($P < 0.05$) increase in the use of thyroid guards by surgeons; 13/115 (11.3%) pre-intervention compared to 54/117 (46.1%) post-intervention. Pre-intervention, across all groups 95.7% (335/350) wore lead aprons and 32.1% (111/346) wore thyroid guards compared with 96.3% (341/354) and 46.2% (163/353) respectively post-intervention. Logistic regression showed that for each additional thyroid guard available there is an 11.1% increased chance of thyroid guard use.

Conclusions

Initial analyses indicate that the educational intervention is effective in increasing compliance with thyroid guards by orthopaedic surgeons.

O11

Cancer cell engraftment and scattering is enabled by cell cycle progression

Oral

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Background & Objectives

Metastasis accounts for 90% of deaths from cancer. Metastasis requires carcinoma cells at the original tumour site to undergo polarity reversal from apical-basal to front-rear polarity in a process defined as epithelial-to-mesenchymal transition (EMT). This polarity reversal initiates cell scattering and is achieved through intracellular changes in centrosome position and microtubule organization. Previously, we found that cell migration was more active in S/G2-phase cells. Our goal was to determine whether cell cycle progression impacts cell scattering as well as metastasis in aggressive breast cancer cells.

Methods

Mouse breast cancer cells, termed 4T1-luciferase2, were synchronized in G1-phase or grown asynchronously and then transplanted in NOD-scid-gamma or BALB/c mice. Bioluminescence was used to track tumour engraftment. EMT markers were assessed via RT-PCR analysis. In parallel, we studied the process of cell scattering in mammary epithelial cell lines (mouse nMUMG-FUCCI and human MCF10A). Cells were monitored via time-lapse live cell imaging as they passed through mitosis and daughter cells scattered by detaching from one another and migrating in the opposite direction. During cell scattering, inter-nuclei distances and time were measured with respect to cell cycle phase in nMUMG-FUCCI cells. Additionally, these parameters were compared in luminal and basal forms of human MCF10A cells.

Results

Our tumour engraftment study demonstrated that cells in the asynchronous phase engrafted more efficiently than G1-phase enriched cells and expressed EMT markers, such as vimentin, Cdh2, Snail1 and Snail2, at elevated levels. Our live cell imaging results revealed that cell scattering was cell cycle dependent with basal cells having an increased scattering distance than luminal cells.

Conclusions

The outcomes from this study illustrate the importance of cell cycle progression in breast cancer metastasis specifically during cell scattering, which predominantly occurred in G1-phase and was more pronounced in basal cells.

Incidence, associations, and impact of antibodies of undetermined significance in solid-phase technology

Poster

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Background & Objectives

Antibodies of undetermined significance/specificity (AUS) are often detected when using a solid-phase platform, in part due to increased sensitivity. AUS are resource-intensive and may delay transfusions. There is a paucity of literature surrounding the incidence, natural history, and patient factors associated with AUS. This study aims to determine the frequency of AUS detected using solid-phase technology, report on reflective laboratory testing, and identify patient factors associated with positive AUS results.

Methods

A 1-year retrospective review of Transfusion Medicine Laboratory antibody records was conducted at a large academic institute. All patients with an antibody screen were included in the study. Laboratory test results and patient factors, including age, sex, ABO, Rh type, transfusion history, and subsequent antibody formation, were extracted from a network of databases.

Results

AUS were detected in 720 (1.9%) patients and 1,956 (3.5%) samples. The frequency of AUS was significantly higher in female patients (2.2%) compared to males (1.5%); absolute difference 0.7%, 95% CI (0.4%-0.9%); ($p < 0.0001$). The average number of tests conducted relating to antibody-investigation was higher for patients with AUS. Patients with an alloantibody were ~7 times more likely to have coexisting AUS, and the frequency of AUS and anti-E was most common.

Conclusions

AUS are more frequently seen in females and lead to increased testing and use of resources. Additional investigations are required to elucidate natural history, associated patient factors, and clinical significance of AUS.

Antimicrobial prescribing and hospital discharge practices in cases of suspected meningitis and encephalitis

Poster

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Background & Objectives

Cerebrospinal fluid (CSF) samples sent for viral Polymerase Chain Reaction (PCR) testing within the Imperial College Healthcare NHS Trust are currently processed by an external laboratory, delaying result reporting. The aims were to examine empiric antimicrobial prescribing practices for patients with suspected encephalitis, meningitis within the trust. Examine the influence of viral PCR results on length of hospital stay.

Methods

A retrospective chart review was carried out, with a descriptive univariate analysis completed using SPSS. Cases identified as CSF samples from patients of the Trust sent for viral PCR testing during from 20th May to 2nd June 2017.

Results

41 samples from 38 patients sent for testing, ranging in age from 18 to 89. 20(53%) were male. None had a positive PCR result. 19(51.4%) patients received empiric antibiotic therapy. 25(67.6%) received antiviral therapy. Of these, 14(56%) had symptoms suggestive of encephalitis. 7(18.4%) patients had a fever, with a significant association between fever and request for infectious disease/microbiology input ($p=0.04$). Presence of fever had a non-significant association with prescription of aciclovir ($p=0.07$) and ceftriaxone ($p=0.09$). 15(40.5%) patients were at risk of infection due to immunosuppression. An immunocompromised state did not influence antimicrobial prescription ($p=1$). HIV testing was done in 22(57.9%) patients. A pending PCR result was used as rationale to delay discharge patient in 4 cases, totaling 14 extra hospital days. PCR result was used in decision to stop aciclovir in 12 cases.

Conclusions

External processing of PCR samples can increase cost and extend patient stay and duration of antimicrobial therapy.

To evaluate the use and effectiveness of Mycophenolate Mofetil (MMF) in patients with systemic autoimmune rheumatic diseases- a retrospective cross- sectional study

Poster

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Background & Objectives

Connective tissue disorder (CTD) involves a wide range of internal organ complications, which may limit its therapeutic strategies. Mycophenolate Mofetil (MMF) has evidence for efficacy in scleroderma, SLE and myositis but its exact indication is still contentious. We aim to determine the efficacy of MMF in treating CTD in our clinical practice. Our objectives are to identify the indications for MMF and reasons for withdrawal; to evaluate the tolerance of and the response of patients treated with MMF.

Methods

A cross- sectional retrospective study was conducted in Rheumatology Department, Cork University Hospital (CUH), from June 2017 to August 2017, on all patients, aged ≥ 18 , diagnosed with at least one CTD and treated with at least one dose of MMF. Reasons for initiating and discontinuing MMF and side effects of MMF were documented.

Results

Fifty patients were recruited; SLE (36.0%) and undifferentiated CTD (34.0%) were the most common diagnostic labels. 94.0% of patients had joint involvement; 66% had skin involvement; 46.0% had pulmonary disease and 14.0% had renal disease. The most common reasons for commencing MMF were joint (57.1%), cutaneous (30.6%) and lung complications. 50.0% of patients continued therapy. Patients who initiated MMF for lung complications were the least likely to withdraw therapy (37.5%). The most common reasons for withdrawal were side effects (44.0%).

Conclusions

MMF can potentially be as effective as other licensed DMARDs to treat CTD with tolerable side effects. Conclusions will be based on the analysis yet to be amended.

Vitamin D levels in Irish children with Type 1 Diabetes Mellitus : A cross-sectional study

Poster

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Background & Objectives

The prevalence of low vitamin D levels reported in healthy European children varies widely between 8% and 95%. However, there are limited reports on vitamin D levels in Irish children notwithstanding one study which revealed a high prevalence of low vitamin D levels in infants only. This study wishes to explore the vitamin D levels in an Irish cohort of children with type 1 diabetes mellitus (T1DM) aged between 18 months and 18 years attending a clinic in the west of Ireland. The aim was to report the prevalence of vitamin D insufficiency and deficiency as well as explore the seasonal variation, if any, in vitamin D levels and its association with demographic and patient characteristics in the cohort above.

Methods

Following ethical approval, a written survey with physical examinations and blood samples from participants were obtained at their annual diabetes clinic review. Serum 25(OH)D was analysed using LC-MS/MS.

Results

Serum 25(OH)D levels revealed vitamin D deficiency or insufficiency in 51.5% of participants (n=68). Mean serum 25(OH)D levels measured during summer and spring [(73.00±20.91) and (57.67±20.29)] were significantly ($p=0.0001$) higher than in winter and autumn [(37.39±15.14) and (39.71±16.87)]. There is a negative (Spearman's r -value=-0.335) correlation between serum 25(OH)D levels and amount of sun exposure which was statistically significant ($p=0.007$).

Conclusions

This study reveals a high prevalence of vitamin D deficiency or insufficiency in this cohort of children with T1DM. Present results support findings from other national and international studies, raising the question of vitamin D supplementation beyond infancy for Irish children.

Is obstetric mode of delivery associated with childhood cognitive ability?

Poster

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Background & Objectives

Caesarean section (CS) rates continue to rise in both Ireland and the UK. However there is uncertainty regarding the long-term consequences of this procedure. It has been proposed that differences in gut microbiota in children born by CS may lead to differences in neurodevelopment and cognitive ability. This study aimed to investigate the relationship between obstetric mode of delivery and cognitive outcomes in childhood.

Methods

Data from the Millennium cohort study, a nationally representative UK birth cohort was used. Obstetric mode of delivery was categorised into unassisted vaginal delivery, assisted vaginal delivery, emergency CS and elective CS. Cognitive ability was assessed using seven assessments that explored verbal and visual-spatial ability. The children completed these during one-to-one sessions with trained study interviewers when they were aged 3, 5, 7 and 11 years. Logistic regression models were used for data analysis adjusting for several potential confounders including maternal ethnicity, age, body mass index, highest educational attainment, social deprivation and paternal education among others.

Results

There was a slight association between cognitive delay and planned CS in the British Abilities Scales Pattern Construction Assessment at ages 5 and 7. Verbal ability was not associated with mode of delivery at any age point nor with patterns of delay (persistent delay and early childhood).

Conclusions

Given that there was only a slight statistical association in two of the seven cognitive assessments we conclude that this should be interpreted with caution and there's unlikely to be any clinically significant association between CS and cognitive ability.

A retrospective analysis to assess the frequency of “Embolic Strokes of Undetermined Source” at St. Luke’s Hospital, Kilkenny

Poster

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Background & Objectives

A third of non-lacunar strokes are of undetermined aetiology. Most of these have a topography to suggest embolus from a proximal source, with no embolic source evident. To date these were considered as cryptogenic, without emphasis on the embolic nature. As a result, an international group has proposed a new clinical construct called “embolic strokes of undetermined source” (ESUS), partly to facilitate clinical trials into secondary prevention in this group. Our aim was to retrospectively characterize all ischemic stroke at a regional hospital in 2016 and identify the number of ESUS patients using the new ESUS diagnostic criteria.

Methods

The national stroke register was used to identify all ischemic strokes admitted to St Lukes Hospital in 2016. The case notes and investigations of each case were reviewed. Each ischemic stroke was classified using the classification systems; T.O.A.S.T and A.S.O.C.D. All strokes labeled as cryptogenic were then subsequently evaluated using Hart and colleagues criteria.

Results

A total of 124 ischemic strokes admitted in 2016; 89 were analyzed as 5 were excluded based on exclusion criteria and 30 files were unavailable for analysis. Cryptogenic strokes made up 21% of all ischemic strokes. Of the 19 cryptogenic strokes only 5 fulfilled the ESUS criteria primarily due to incomplete assessment of the intracranial vessels.

Conclusions

Cryptogenic strokes accounted for almost a quarter of all ischemic strokes in 2016, which is comparable to other stroke-related studies. Despite incomplete assessment of the intracranial vessels, we were impressed by the level of completeness of all the other imaging outlined in ESUS at our regional hospital.

Microanatomy of the thumb carpometacarpal (1CMC) joint

Poster

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Background & Objectives

Osteoarthritis of the first carpometacarpal-(1CMC) joint is a degenerative joint disease affecting approximately 25% of women and 8% of men to some degree during their lifetime¹. 1CMC osteoarthritis can be debilitating and may require surgical intervention to restore at least partial joint function. Despite its obvious importance, there is relatively little research published on the 1CMC-joint and the progression of osteoarthritis in this joint. The objective of this research project was to develop an integrated set of methods to examine normal and diseased joint surfaces.

Methods

A 1CMC-joint was obtained from a donor-cadaver. The joint was dissected free and the joint capsule opened. The joint was photographed and 3D visual models were produced by photogrammetry. The bones were scanned by micro-CT. 3D-volume renderings depicting the articular surfaces were obtained. The articular surfaces were examined directly using eSEM and the same bones were then decalcified and processed for routine paraffin histology.

Results

The anatomy and microanatomy of the articular surfaces of the 1CMC-joint is described. The gross appearance of the surfaces is directly correlated with their appearance under low-magnification and by eSEM. This is compared with the appearance of the volume renderings from micro-CT. All of the surface inspection methods are correlated with the cartilage bone interface as seen in histological sections.

Conclusions

These methods can be used to give a complete description of the articular surfaces of the 1CMC-joint and to relate this information to that obtained using clinically relevant CT data.

Bone mineral density and fracture risk in Ankylosing Spondylitis: A meta-analysis

Poster

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Background & Objectives

We conducted a meta-analysis of studies to examine the risk of vertebral and non-vertebral fractures in patients with ankylosing spondylitis (AS). Additionally, we evaluated the risk factors of vertebral fractures in AS.

Methods

Two authors independently searched Embase and Medline for studies that had assessed the risk of fractures in patients with AS. Twenty-two studies were eligible for the meta-analysis.

Results

Patients with AS had high frequency of vertebral fractures [OR (95% CI): 1.96 (1.52–2.51)]. Major risk factors for vertebral fractures in patients with AS include low BMD at the femoral neck and total hip, male gender, longer disease duration, higher BASDAI, higher BASRI, and possibly inflammatory bowel disease. The risk of non-vertebral fractures [OR (95% CI) 1.10 (1.04–1.15)] was 10% higher in AS patients than in controls. The risk of hip fractures in AS patients was not statistically significant [OR (95% CI) 1.17 (0.71–1.92)] in our pooled analysis. We found that patients with AS are at high risk of vertebral fractures. Male sex, duration of AS, mSASSS, BASRI, and low BMD at the hip and distal forearm were associated with the risk of vertebral fractures.

Conclusions

Current evidence on the risk of hip fractures in patients with AS is inconsistent. Data about the effect of NSAIDs and TNF inhibitors on fracture risk in AS are limited.

Development of a Discrete Choice Experiment to determine patient's preferences for the treatment of prostate cancer: a focus group discussion

Poster

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Background & Objectives

Various treatments are available for Prostate Cancer. To determine patients' preferences for the various types of treatment we will use a Discrete Choice Experiment (DCE) methodology which revolves around identifying attributes of these treatments and how different levels of those attributes might affect patients' preferences for particular treatment. The aim is to develop and design a DCE to determine patients' preferences for the treatment of prostate cancer using focus group discussions.

Methods

The discussion was divided into four different sections and each section focused on one aspect of the patients' treatment journey. The focus group was led by an experienced facilitator, recorded and transcribed. Basic analysis was carried out by grouping the transcript into themes or attributes.

Results

The focus group transcript identified several interconnecting themes. Some themes related specifically to why the patients chose the treatment they did, their experiences through the treatment phase and the side-effects of the treatment. Table 1. What matters to patients in choosing their treatment. Chance of cure Chance of reoccurrence Ability to maintain sexual functionality Degree of urinary incontinence Hospital stay after the treatment Doctor's reputation Influence of peers Ability to pursue leisure activities during and after treatment

Conclusions

Although a small number of participants were involved in our focus group, the concurrent nature of their responses provided us with list of attributes which we can use to design our DCE. Further focus group discussions may be necessary to determine levels of each of these attributes.

Diagnostic challenges in melanoma: Going back to (morphology) basics

Poster

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Background & Objectives

A wide variety of histopathological variants of melanoma have been reported. Melanomas are also known to mimic other malignant tumours.

Methods

A 52 year old man presented with a raised pigmented skin lesion on his left upper back. He was diagnosed with malignant melanoma, superficial spreading type, supported by immunohistochemistry. Interestingly, the melanoma displayed prominent foci of clear cell/balloon change with multi-vacuolation of the cytoplasm. This imparted a pseudolipoblast type appearance. He later presented with a rapidly growing high grade malignant tumour of the urachus.

Results

Initial diagnosis favoured a poorly differentiated bladder carcinoma. On microscopic review, the bladder tumour showed striking cytoplasmic vacuolation, which in some cells was multivacuolated with a lipoid-like morphology. Focal rhabdoid cells were noted. Immunohistochemistry revealed the bladder tumour to be BRAF V600E positive. The diagnosis therefore was adjusted to metastasis from known primary melanoma.

Conclusions

Though lipoid and rhabdoid differentiation has been reported in urothelial carcinoma, there is a lack of urothelial-specific immuno markers in our bladder specimen. There are also differences in expression of the various melanocytic markers between the primarily lesion and the bladder lesion. However, both specimens are BRAF V600E positive. This finding, in conjunction with the bladder specimen's histological similarity to previous melanoma resection, favours a diagnosis of metastatic melanoma to the bladder. Undifferentiated metastatic melanoma can pose a diagnostic challenge. Morphological analysis and comparison with the primary lesion, and BRAF immunohistochemistry can aid in diagnosis.

The impact of Diabetes Mellitus on bone marrow progenitor cell number and proliferative capacity

Poster

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Background & Objectives

Increased bone fragility and delayed fracture repair are complications of diabetes mellitus (DM). Bone marrow isolated from pre-clinical models of DM contains fewer multi-potential progenitor cells (MSCs) with reduced osteogenic capacity compared to non-DM isolates. This study proposes that alterations in bone-marrow MSC number and capacity in humans living with DM contribute to the pathology underlying DM-associated osteopathy through MSC inability to support bone homeostasis. This study aims to characterize MSC number and capacity, identifying DM-induced alterations.

Methods

Bone marrow samples were donated, with informed consent, by individuals undergoing hip arthroplasty in GUH. The marrow was diluted in PBS and mononuclear cells (MNCs) counted. A neat marrow aliquot was plated for colony forming unit-fibroblasts (CFU-F) and CFU-osteoblasts (CFU-O) quantification. MSCs were isolated through direct plating methods and culture expanded, plating 500,000 MSCs in each new passage upon confluence.

Results

A non-significant increase in MNC/ml was observed between control or OP marrow samples and samples from donors with type 2 DM (T2DM). Quantifying CFU-F number per 100,000 MNCs also demonstrated comparability between donor groups. A non-significant decrease in osteogenic precursors was identified in donations from individuals with T2DM as compared to control or OP donations. An increase in doubling time was observed in cells derived from individuals with T2DM compared to samples from control or OP patients.

Conclusions

These data indicate MSCs residing in the presence of DM have reduced expansion and osteogenic capacity, thereby possibly rendering them less capable to maintain bone homeostasis or contribute to fracture repair.

Evaluation of the Personal and Life Skills (PALS) Programme for adolescents with high-functioning Autism Spectrum Disorder (ASD)

Poster

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Background & Objectives

Adolescents with ASD can present with a wide range of social and pragmatic language skill deficits which pose a significant challenge as they navigate complex social interactions throughout adolescence. A lack of, or limited interventional support structures further exacerbate the marginalisation of this vulnerable group when transitioning from primary to secondary level education. The objective was to evaluate the overall outcome of the PALS programme and assess the interventional impact on a number of outcomes including social skills, anxiety and autistic traits from pre to post-intervention.

Methods

This study was facilitated in a specialist ASD clinic and designed as a non-trial based intervention in response to a growing demand for a social skills program that would provide support in the areas of language and social behaviour. The programme was facilitated over 18 months with 30 children completing the programme.

Results

In relation to the Autism Treatment Evaluation Checklist (ATEC), there was a significant difference across time points on the total ATEC score indicating a significant reduction in overall autistic traits. Equally, there was a significant difference across time points on the Spence evaluator indicating an overall reduction in anxiety levels across the group. Social/pragmatic language skills, loneliness and self-esteem scores, while not statistically significant, demonstrated areas of improvement within subscales.

Conclusions

These findings suggest that a social-skills interventional programme may provide a key support structure to children with ASD during challenging times of transition. This support may have a positive impact in the reduction of overall autistic traits.

Antiplatelet versus anticoagulation therapy in extracranial cervical arterial dissection

Poster

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Background & Objectives

The aim was to compare the outcomes of anticoagulation vs antiplatelets in treatment of eCAD. Primary endpoint was subsequent stroke. Secondary endpoints were recovery from initial stroke, re-dissection and mortality.

Methods

Any patient diagnosed with eCAD from 2005 to July 2017 was included. Patients' clinical data, imaging, therapy and outcomes were analysed.

Results

Over twelve years, 39 patients presented with eCAD. Twenty-seven were males. Thirteen were under 45yrs (mean 50.4 yrs \pm 16.8 SD). 30.8% of dissections were precipitated by trauma. Eighteen patients (46.2%) presented with an ipsilateral stroke and one died prior to commencement of therapy. A further 28.2% presented with headache, whereas 20.5% had visual disturbance. Seventeen patients (43.6%) were managed with antiplatelet therapy, seven with anticoagulation and thirteen with combined therapy. Four patients required surgical intervention, all of whom were post trauma. No patients developed subsequent ipsilateral stroke. Of patients initially presenting with stroke, 37.5% of the antiplatelet group progressed to full recovery compared to 100% of those on anticoagulation and 57.1 % on combined therapy ($p=0.230$). Re-dissection did not occur in any patient. No further mortality occurred. Overall survival at 5 years was 97.4%.

Conclusions

Recurrent stroke is rare. The choice of therapeutic approach does not have a significant impact on outcomes in eCAD patients.

A study of the correlation between the verbal Months Backwards Test (MBTv) and a novel computerised version (MBTc) in a population with mixed neuropsychiatric conditions

Poster

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Background & Objectives

The MBTv is the most sensitive bedside test of attention for identifying delirium in an older patient cohort. This study trials an app on a handheld tablet version in patients with diagnosed neuropsychiatric conditions. Hospital staff occasionally have difficulty with the MBTv scoring system, we hypothesise that employing the MBTc will allow ease of interpretation and reduce scoring inconsistency. The objectives was to observe if there is significant correlation between patient performance in the MBTc and the MBTv in a cohort with mixed neuropsychiatric conditions.

Methods

Participants were recruited from the Psychiatry of Later Life Consultation Liaison Service at Sligo University Hospital and Galway University Hospital, allocated to four different cohorts (Dementia and Delirium, Dementia, Delirium, Cognitively-Intact) based on prior diagnosis, clinical impression and the rating scales listed: • Revised Delirium Rating Scale (DRS-R98) • MMSE • MBTv • MBTc • IQCODE. MBTv/MBTc agreement was investigated.

Results

5 patients, mean age: 80(SD:7.6) 31 male(37.3%). 36 delirium and dementia(DMDL), 7 delirium only(DL), 13 dementia only(DM), 19 cognitively-intact. Overall Spearman's rho=0.772(p<0.0001). Agreements between the assessments were: DMDL rho=0.666,p<0.0001, DL rho=0.778,p=0.039, DM rho=0.378,p=0.203, cognitively-intact rho=0.143,p=0.559.

Conclusions

Overall, there was statistically significant agreement between the MBTc and the MBTv. For the delirious subset (DMDL,DL), statistically significant agreement was present. However, poor inter-test correlation existed in the group without delirium (DM,cognitively intact). These results would imply that the MBTc is as effective as the MBTv in patients who are clinically suspected to have delirium (DLDM, DLonly) and its ease of scoring interpretation may favour its use in the future.

An analysis of complex aortic surgery over a 10-year period in a tertiary cardiothoracic centre

Poster

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Background & Objectives

Open thoracic replacement of an aneurysm or dissection of the aortic root/ascending aorta is considered gold standard management. The objectives were to better understand complex aortic surgery and the effect prevalent aortic pathologies (aneurysm/ dissection) and operative urgency have on patient outcomes in a single tertiary cardiothoracic centre.

Methods

Cork University Ethics Committee granted approval, July & October 2017. The Cardiac Database at CUH was screened for patients who underwent aortic root replacement (ARR) or interposition tube grafting (ITG) for a variety of aortic pathologies (2006-2016). Inclusion criterion was applied; pre, operative and post-operative variables were analysed. Statistical analysis was performed using both independent t-tests and χ^2 analysis for categorical data.

Results

92 consecutive patients underwent complex aortic surgery; 39 ARR and 53 ITG were performed. The mean age was 55 ± 14.2 years, 74% male, the majority of whom presented at either NYHA I or IV, 35% and 29%, respectively. 39 underwent ARR and 53 ITG for either root/ ascending aortic aneurysm or acute type 'A' dissection (AD). Operative urgency was divided into elective (49%), emergency (38%) and salvage (13%) conditions; overall HM was 5, 11 & 42%, respectively ($p=0.008$). HM for AD was 23%, rising to 32% in ITG ($p=0.004$). Aneurysmal HM was 6% ($p=0.023$), increasing to 9% in ARR. Overall 30-day mortality was 3 (dissection) and (aneurysmal) 6% ($p=0.038$). Longer CPB ($m=185 \pm 45$ minutes, $p=0.003$) and deep hypothermic states ($m=19 \pm 5$ o, $p=0.004$) demonstrated higher HM rates in dissection patients, compared to shorter, warmer temperatures for the equivalent pathology. 49% experienced complications, 12% died, 2% due to arrhythmia ($p=0.015$, Pearson $\chi^2=20.553$; Cramer's $V=0.5$). Post-operative atrial arrhythmia was the most common complication (24%); 6% of patients experienced permanent stroke and 1% died due to sepsis.

Conclusions

Curative replacement of either the root or ascending aorta, due to either aneurysm or AD, with the appropriate surgical modalities, does have favourable outcomes at CUH in comparison to no intervention or medical management alone. There is clear evidence to support higher rates of HM with increasing surgical and aortic complexities, further follow up data is required in order to examine the true effects of these procedures in the long term.

Factors affecting time to reach target in patients with early rheumatoid arthritis (ERA): an observational cohort study

Poster

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Background & Objectives

Several prognostic markers have been identified as influencing time to target in patients with ERA including Anti-Citrullinated Protein Antibodies (ACPA), Rheumatoid Factor (RF), age and BMI. The aim was to explore the affect if any of prognostic factors on the time to reach target (remission or low-disease activity) in a cohort of patients with ERA attending the North Western Rheumatology Unit (NWRU).

Methods

All data on patients with ERA attending the NWRU between September 2014 - March 2017 for a 12 months period (n=79) under the T2T program was prospectively recorded and analysed on an SPSS V24.0 database and updated during each clinic visit. Association between individual and composite factors affecting time to target were analysed using independent T-tests. The association between sub groups of categorical data and time to target were further analysed using the chi-square test.

Results

The mean time to reach steroid free LDA/remission was 7.09 (+4.45) months. There was a statistically significant mean difference of 2.6 months (p=0.010) in T2T between the DMARDs monotherapy group (5.8 +/- 3.8 months) and the DMARDs combination (including biologics) (8.4 +/- 4.7 months) group. In the chi-square tests significant association were identified between Time to Target and BMI status, smoking status and CDAI group at initiation with p-values <0.05.

Conclusions

The mean time to target steroid free was 7.09 months. Factors identified as influencing the time to target were duration of symptoms prior to referral, BMI and smoking status along with CDAI status at baseline visit and drug combination used to reach target.

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The road to consultancy: what it takes to get to the top

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Background & Objectives

Medical and surgical training pathways in Ireland are changing. This study set out to determine demographics, training duration and research activities of the current cohort of consultants at University Hospital Galway (UHG) to determine goal posts for which doctors in higher specialty training (HST) should aim.

Methods

A single-centre study conducted by prospectively distributing questionnaires in an interview format. Data was collected and analysed using Excel.

Results

110 of 166 consultants at UHG completed the questionnaire (66%). 70.9% were male. Psychiatry, Pathology, and Dermatology were the only specialties with female consultants in the majority. 91.8% were Irish. The specialties with the youngest age at appointment were Geriatrics, Dermatology, Immunology, and Radiology (mean age=34), with Surgery, Oncology, and Cardiology having the (mean age=37). 85.7% trained via a formal HST scheme. All consultants in Geriatrics and Dermatology completed higher degrees; as well as 91.0% of surgeons and 86.0% of cardiologists. 85.4% of consultants did not take a break in training. Of those who did, 85.0% were female. Duration of training varied greatly with Surgery, Cardiology and Paediatrics consultants having the longest HST (mean=7 years). In Anaesthesia, Radiology, Cardiology, and Oncology all consultants completed a fellowship prior to appointment. 83% of surgeons completed fellowships. Fellowships were less common in Psychiatry, Pathology, Microbiology, and Immunology.

Conclusions

Great variation exists in training pathways. As training changes, establishing a guideline for medical students and doctors working towards consultancy in Ireland is imperative.

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Analysis of comparable home/clinic blood pressure readings in the Leanbh population

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Background & Objectives

Hypertensive disorders of pregnancy consist of a broad spectrum of conditions which are associated with significant negative outcomes for both mother and child. These disorders are common and are estimated to complicate 10-15% of all pregnancies. Regular home blood pressure monitoring can be used as a way of identifying hypertension outside of the hospital clinic. The aim was to determine the relationship between home and hospital blood pressure readings in a cohort of pregnant women.

Methods

This study used the LEANBH (Learning to Evaluate and manage ANtenatal Blood pressure at Home) cohort data. This cohort consisted of 52 healthy primigravida singleton women age 21-44 years not receiving treatment for hypertension. SBP (systolic blood pressure) and DBP (diastolic blood pressure) was obtained during hospital antenatal visits and regularly at home via patient self-monitoring using a Microlife WatchBP Home Monitor. The home vs hospital SBP and DBP was investigated to identify cases of white coat or masked hypertension. The effect of increased SBP or DBP on pregnancy outcome was analysed.

Results

Results demonstrated mean hospital (122+/-15 p=0.001) systolic blood pressure is significantly higher than home (108+/-8 p=0.001). Moreover, hospital (77 ± 10 p=0.001) diastolic blood pressure is also significantly higher than home (64 ± 6 p=0.001).

Conclusions

Home BP monitoring appears to be a potentially useful addition to routine antenatal care. A further large randomised controlled trial is necessary and planned to identify potential statistical significance.

Mild traumatic brain injury biomarkers and testing methods for point-of-care assessment

Poster

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Background & Objectives

Successive mild traumatic brain injury (mTBI) sustained in contact sports can lead to serious injury or death. However, mTBI is difficult to diagnose and there is high demand for reliable biomarkers to allow objective point-of-care testing and improve prognostic outcomes. The primary aim of this investigation was to evaluate candidate biomarkers and detection methods based on their suitability for use in point-of-care mTBI testing.

Methods

Literature analysis on the status of current fluid biomarkers was performed, focusing specifically on criteria for ideal mTBI biomarkers and testing methods. 28 biomarkers were assessed based on sensitivity, specificity, AUC (specificity vs. sensitivity), timing of peak serum interval, testing method, availability in biofluids, and concentration proportionality.

Results

Detection of Tau protein was found to be most sensitive, with a detection limit of only 0.02pg/mL. Phosphorylated neurofilaments (NFHp), microRNA, and Myelin Basic Protein (MBP) have been shown to have 100% specificity in some studies. AUC of 1.0 was found for NFHp. S100B, Tau and glutamate receptor 2 (GluR2) had the shortest peak serum level (~1 hour). Tau and GluR2 are detectable using ultra-sensitive assays, with GluR2 currently detectable through a smartphone-enabled device.

Conclusions

Majority of biomarkers were present in serum post-injury and many were in concentrations that were proportional to severity of injury. Currently, no substance exists with all properties of an ideal mTBI biomarker. Results of this investigation were limited by conflicting data among studies. We suggest that future point-of-care devices be able to detect a panel of mTBI biomarkers due to wide fluctuation in individual properties.

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Poster

Maternal alcohol consumption during pregnancy and the risk of autism spectrum disorders in offspring

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Background & Objectives

Maternal alcohol consumption during pregnancy (MACP) is a potential risk factor for autism spectrum disorders (ASD) in the offspring. However current evidence is limited. This study aimed to examine whether MACP is associated with the development of childhood ASD.

Methods

We conducted a retrospective analysis of data extracted from a nationally representative UK cohort, the Millennium Cohort Study. Data on MACP and relevant confounders were obtained from parental questionnaires when infants were 9 months of age. Outcome of ASD was obtained from parental questionnaires at 11 years of age. Crude and adjusted logistic regression was used to analyse the relationship between MACP and ASD.

Results

There were 18,168 singleton mother-child pairs with data on MACP from sweep 1 of the data collection. Of these 12,595 answered the question on ASD in sweep 5, resulting in 205 reported cases of ASD. Greater than two-thirds of the study cohort (67.3%) reported no alcohol during pregnancy, with lesser numbers of women reporting light (25.2%), moderate (5.4%) and heavy (2.1%) consumption. No statistically significant association was found between MACP and ASD for light (OR 0.78, 95% CI 0.48-1.29), moderate (OR 0.89, 95% CI 0.35-2.27), or heavy (OR 1.54, 95% CI 0.56-4.21) MACP.

Conclusions

Light and moderate alcohol consumption during pregnancy was not associated with the risk of developing ASD in this study cohort. Results of the high MACP group were limited by statistical power and more research is warranted to investigate the relationship between heavy MACP and ASD.

Glycosignature in healthy and degenerated human intervertebral disc

Poster

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Background & Objectives

Discogenic low back pain affects 42% of patients with chronic low back pain[1]. Degenerative disc disease is described as failure in cellular response to external stresses leading to physiologic dysfunction and disc destruction. Glycosylation patterns of tissues give insights into the spatially and temporally regulated inflammatory and degenerative processes. The degeneration of the human disc is a process never before investigated by lectin histochemistry. The aim was to characterize the glycoprofile of the IVD histochemically using plant lectins in healthy and diseased tissue.

Methods

Staining with several lectins (Con A, SNA, MAA, DSA, UEA-I, PNA, WGA and WFA) of formaldehyde-fixed sections of foetal (n=2) and diseased tissue (n=2) was performed with ethical approval.

Results

Staining with all lectins showed a lamellar arrangement of binding in ECM of the AF of foetal tissue that was lost in Thompson Grade III/IV tissue. A significant increase in sialylated/galactosylated motifs was seen in degenerated tissue when compared to healthy tissue. There are significant differences in fucosylation, mannosylation and GlcNAc expression in healthy vs. degenerated tissue and characteristic changes in patterns of binding.

Conclusions

This study has shown that healthy and degenerated human discs present distinct glycosylation trends intracellularly and ECM in AF and NP tissue. The carbohydrate moieties detected may correlate with adhesion molecule/proteoglycan expression which could play a role in the degenerative process of intervertebral disc disease. This pilot study offers insight into the glycoprofile of the IVD and the alterations in this glycoprofile that occur in a disease model.

Knowledge, attitudes and behaviours of medical students towards sexual health

Poster

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Background & Objectives

Sexual health is a key component to a holistic approach to population health and well-being. As medical students are future healthcare professionals, it is critical they understand the importance of sexual health for their own health and that of their future patients. The aim of this research is to explore the KAB of medical students towards sexual health focusing on sexual-activity, contraception and STIs.

Methods

The study involved both quantitative and qualitative components, carried out by incorporation of a cross-sectional survey of medical students. The questionnaire was based on the findings of a systemic literary review, as well as experience of researchers in the field. Respondents were invited to participate via a gatekeeper in the School of Medicine. Data derived from the questionnaire was stored and analyzed in SPSS. Ethical approval was granted by the College of MNHS REC.

Results

The mean age of respondents was 21, females accounting for 66% of respondents. 1-3MB had high levels of participation accounting for 85.4% of responses. The majority of respondents (69%) agreed that their future career influenced decisions surrounding sexual health, while levels of knowledge increased as students progressed ($p < 0.05$). A large proportion (86%) of participants agreed they would like to further their knowledge at a preclinical stage.

Conclusions

Participants displayed levels of sexual activity similar to the wider student population. While the majority of participants felt they had an adequate knowledge and were open to discuss sexual health, they believed enhancing this knowledge at a preclinical stage would be beneficial.

Incidence of subsequent stroke in patients after attending the TIA clinic in Cork University Hospital

Poster

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Background & Objectives

Transient ischaemic attack (TIA) is a harbinger for the imminent development of stroke. The ABCD2 score clinical tool predicts 7- and 90-day stroke risk in TIA patients. The OXVASC study showed that ABCD2 0-4 predicts 3% stroke recurrences within 7 days whereas ABCD2 5-7 predicts 12% strokes, felt to reflect cases with atrial fibrillation or symptomatic carotid stenosis. A rapid access ambulatory OPD clinic for patients with recent (1-7 days) TIA and ABCD2 below 4 is run in CUH. We sought to evaluate (1) recurrent 7-day and 90-day TIA/stroke risk; (2) rate of carotid endarterectomy and (3) rate of de novo anticoagulation among the first 250 low risk patients attending the rapid ambulatory TIA Clinic at Cork University Hospital.

Methods

Data was collected from the iSoft Clinical Manager software, city wide imaging platforms, chart review and by postal survey.

Results

Risk for recurrent TIA and stroke was 0% and 0.4% at 7d and 90d respectively. Among patients with confirmed TIA, 9.2% had carotid endarterectomy and 4.3% were anticoagulated. The postal survey had a 35.2% response rate and did not identify any additional recurrences.

Conclusions

It is safe to see patients with ABCD2 scores of 0-4 at the TIA clinic as these patients are at low risk of subsequent stroke following appropriate treatment/intervention. Despite low scores, 13.5% had a high risk aetiology (AF or symptomatic carotid stenosis) identified and treated.

Undergraduate research in medicine

Poster

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Background & Objectives

Undergraduate research (UR) is recognised as a way of enhancing medical students' skills and cultivating perspectives necessary for future professional practice. This study aimed to evaluate the NUI Galway School of Medicine summer research programme and determine how to optimise it for future participants.

Methods

Following literature review, a survey was developed asking students (n=71) about demographics, funding source, motivation for participation, skills gained, positive and negative experiences, and suggestions for improvement. Surveys were circulated at UR workshops, and emailed to those unable to attend. Data were analysed using Excel. Group interviews were performed, discussing similar topics to the survey but in greater depth. Content analysis was used to identify recurring themes in interview transcripts.

Results

38 students completed the survey, representing a 54% response rate. Students cited professional development and interest in research as motivating factors. Gaining knowledge of the research topic, familiarity with research processes, and positive team relationships were noted as positive aspects of the programme. Lack of supervision and time constraints were highlighted as negative aspects. A fourteen-student subgroup participated in group interviews. Suggested improvements included establishing social media groups and regular meetings to reduce the isolation experienced by some students. 36/38 students would recommend UR to their peers.

Conclusions

Overall the programme feedback was very positive, with changes made based on previous feedback positively received. The important role that students play in shaping the UR programme will continue to be encouraged, and study of past participants is ongoing to better understand the longer-term impact of UR.

Investigations on bone morphometry and bone mineral density distribution (BMDD) among osteoarthritic (OA), osteoporotic (OP) and type 2 diabetic (DB) patients

Poster

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Background & Objectives

Type II diabetes has been known to compromise bone microstructure, increasing patient's fracture risk even with normal Bone Mineral Density (BMD)[1]. However, mineral heterogeneity in diabetic human bone still unknown. The aim of this study is to compare human trabecular bone morphometry, stiffness and strength, and mineral heterogeneity in patients presenting either with (n=5)DB, (n=10)OP or (n=5)OA controls, focusing mainly on central region of human femoral head (HFH).

Methods

20 HFH were obtained from consented patients age 55-90, n=6(Males) and n=14(Females) undergoing hip replacement surgery in 2 local hospitals. 4-8 bone cores from the central region were scanned using MicroCT to obtain 3-Dimensional X-ray images. They were then tested using a Zwick tensile/compression testing machine. T-test was used to determine statistical significance ($p < 0.05$).

Results

Bone morphometry in OP were significantly decreased compared to OA and DB respectively, characterized by significant decrease in Bone Volume /TrabecularVolume (-16.3% and -20.7%), Trabecular.Number (-11.0% and -9.9%),Trabecular.Thickness (-6.9% and -11.9%), and significant increase in Trabecular.Space (+9.5% and +11.8%). Additionally, significant decrease in Stiffness (-58.7% and -60.8%) and Yield Stress (-54.2% and -60.8%). BMDD analysis showed significant increase in OP compared to OA and DB respectively, Peak (+5.0% and +6.4%), full width at half maximum (FWHM) (+31.0% and +13.8%). Compared to OA, DB had a significant increase in FWHM (+15.2%).

Conclusions

OP vs OA and OP vs DB are statistically significant. DB vs OA, only significant increase in FWHM, indicating more heterogeneity in DB which might be contributing factor to bone brittleness compared to OA.

Using discrete choice experiments (DCEs) to untangle the use of incentives for recruitment in clinical trials: a pilot study

Poster

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Background & Objectives

Develop and pilot a Discrete Choice Experiment (DCE) to identify and quantify preferences for incentives for recruitment of people 65 years and over in clinical trials.

Methods

Participants aged 65 and over were asked to imagine themselves joining randomized controlled trials (RCTs) to improve their health. Participants had to choose the preferred RCT alternative i.e. trial A, B or neither in each choice set of a DCE. Each DCE has 8 choice sets, generated by an orthogonal effect design. Each choice set has 5 repeating trial attributes of differing (levels): value of incentive (€0, €30, €60), method of incentive (cash, voucher, present), trial benefit (low, medium, high), trial risk (low, medium, high) and time involvement (1-hour single session, 30 minutes a day for 3 weeks, 30 minutes per week for 3 months).

Results

51 Irish participants were included for analysis. The DCE was analysed by a conditional logistic regression. An incentive of high monetary value was most attractive. There was no significant difference between preferences for cash and voucher or cash and gift. However, gifts were more attractive and preferred than vouchers. In terms of time involvement, participants preferred either a short time commitment or a longer-term commitment with less frequent sessions, rather than an intermediate duration of commitment with more frequent sessions.

Conclusions

This pilot DCE suggests that a high value incentive in the form of a gift is the type of incentive that can potentially increase recruitment in clinical trials of participants aged 65 years and over.

Disease-specific quality of life in children with recurrent acute Otitis Media and Otitis media with Effusion

Poster

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Background & Objectives

Otitis media(OM) is the inflammation of the middle ear. Nearly all children will have suffered at least one episode of acute otitis media by six years of age. OM causes a significant burden for children, their parents and health care systems. OM frequently results in functional limitations of hearing resulting in communication problems and speech and language delays. The aim of this project is to analyse the different factors that contribute to the quality of life of children that present with otitis media.

Methods

Children(n=76) that referred to clinic presenting with a history of either recurrent acute otitis media (RAOM) or otitis media with effusion(OME) were recruited under informed consent. Interviews were conducted with a parent of the recruited patient. The parents were asked basic history questions and then asked to complete the validated Otitis Media 6 questionnaire. The collected data was analysed using thematic analysis.

Results

A total of 76 patients were included in this study. 54(71.1%) of the presenting patients were male. The mean age at the time of presentation to clinic was 6 years (range 6 months- 16 years) with a standard deviation of 3.4 years. 46(60.5%) of the presenting patients were diagnosed with OME alone, 21(27.6%) presented with RAOM alone and 3(3.9%) presented with both.

Conclusions

In this population, there is a greater incidence of otitis media in male children. For all instances that a patient was followed up having undergoing ventilation tube (VT) insertion, there was overall improvement in all categories of the survey.

A three center audit follow-up of 6-hour monitoring for administration related reactions during the first administration of subcutaneous (SC) trastuzumab

Poster

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Background & Objectives

In 2012, Subcutaneous (SC) Trastuzumab was introduced as an alternative formulation to intravenous (IV) trastuzumab for HER2+ breast cancer patients. The pivotal HannaH study demonstrated that SC trastuzumab was non-inferior to intravenous (IV) trastuzumab, and is preferred by patients and providers. Furthermore, serious administration related reactions (ARRs) such as hypotension, respiratory distress etc. were not reported in the HannaH study. However, the summary of product characteristics (SPC) advises that patients should be observed for ARR for 6 hours post the first administration (and 2 hours post subsequent administrations), similar to the IV formulation. In 2016, we conducted an audit at a single institution to demonstrate that administration related reaction during first administration do occur but are usually immediate, mild and self-limiting.

Methods

A multicentered retrospective audit of patients commencing SC trastuzumab from 2014-2016 was conducted at five institutions in Southwest Ireland. Medical notes for each patient were reviewed to record adverse events reported on the day of first administration or at the subsequent visit. Furthermore, all patients were interviewed by telephone and questioned regarding adverse events with first or subsequent injections. A subset of patients were also asked regarding their satisfaction of subcutaneous trastuzumab compared to the intravenous formulation.

Results

The study is currently ongoing having identified 166 patients. Results of audits from two completed centers with 59 patients, of whom 49 had received prior IV trastuzumab. Patients received a mean of 11 injections. There were 657 sc trastuzumab injections, associated with 1550 hours of observation as per SPC. 4 injections (0.6%) were associated with ARR within 24 hours, all on the first cycle. 3 patients (5%) experienced injection site reactions immediately post injection, 1 patient had injection site pain during the injection. Of the 3 with injection site reaction, 1 patient also experienced petechia on subsequent exposure. 1 patient experienced pyrexia and dry cough 24 hours post injection and was hospitalized for respiratory tract infection. No patient experienced a reaction between 2 and 6 hours post first injection. There were no serious ARRs. Results for the rest of the centers will be presented at the conference.

Conclusions

ARRs related to sc trastuzumab are usually immediate, mild and self-limiting. Observing patients for 6 hours post first injection and 2 hours post subsequent injections represents an inefficient use of healthcare resources.