

Abstracts

Annual Trainee Doctors' Prize Day, Thursday 10th November 2016.

Postgraduate Centre,
Belfast City Hospital



Oral Presentations

Cytokine concentrations change with age in healthy individuals without chronic disease.

F Keshkar, C Ford, M Rice

Background: With increasing age, the processes of functional decline in the immune system that are collectively termed immunosenescence result in an imbalance between inflammatory and anti-inflammatory pathways. The resulting low grade chronic proinflammatory state is associated with the development of age related conditions including Alzheimer's and cardiovascular disease. The primary aim of the study was to investigate cytokine concentrations change with age in healthy individuals without chronic disease.

Methods: Plasma samples were examined for cytokines IL-1ra, IL-2, IL-4, IL-6, IL-8, IL-10, IL-12(p70), eotaxin-1, GM-CSF, IP-10 and TNF- α . This information was used to compare cytokine levels with average polyphenol intake and increase in age.

Results: 63 healthy participants aged 20–84 years were divided into young and old groups. IL4 and IL8 exhibited statistically significant declines in plasma concentrations with age. When comparing cytokine levels between females and males the two anti-inflammatory cytokines IL-4 and IL-10 were higher in women than men and all pro-inflammatory cytokines were decreased. Links between diet, exercise, BMI and plasma cytokine levels were assessed and this identified two associations as significant in young people only: IL-1ra vs. fruit and IP-10 vs. dairy.

Discussion: the results of this study indicate a signal of healthy ageing which differs between genders, with a less inflammatory cytokine milieu observed in females and more substantial proinflammatory changes in men.

Statin use, mevalonate pathway biomarkers, and colon cancer survival.

Ronan Gray, Maurice B Loughrey, Peter Bankhead, Chris R Cardwell, Stephen McQuaid, Roisin F O'Neill, Kenneth Arthur, Victoria Bingham, Claire McGready, Anna T Gavin, Jacqueline A James, Peter W Hamilton, Manuel Salto-Tellez, Liam J Murray, Helen G Coleman.

Introduction: The potential anti-cancer effect of statins in colon cancer may be restricted to certain molecular subgroups.

Aims: To assess the interaction between p53 and HMGCR expression, KRAS mutations, and the association between statin use and colon cancer survival.

Methods: 740 stage II/III colon cancer patients were identified

using population-based methods (2004–2008). Medication data at diagnosis was available. Tissue blocks were retrieved to determine immunohistochemical expression of p53 and HMGCR and the presence of KRAS mutations. Cox proportional hazards models were used to calculate cancer-specific and overall survival.

Results: Statin use was not associated with improved cancer-specific survival compared to non-use (HR=0.82, 95% CI 0.59–1.15). However, there was some evidence of a difference in the association between statins and survival by HMGCR status (P for interaction=0.07) and by KRAS status (P for interaction=0.04). The associations were attenuated for overall survival. No interaction was observed between statin use and p53 expression.

Discussion: There was evidence of improved survival amongst statin users but only amongst individuals with KRAS-wild-type tumours or tumours that overexpress HMGCR. Further investigation is warranted to determine if trials assessing adjuvant statin therapy in specific molecular subgroups are justified.

Abbreviations: HMGCR – hydroxymethylglutaryl-CoA reductase; HR – hazard ratio; CI – confidence interval.

Medical students' lived experience of a cancer diagnosis

Michael Corr, Gary Roulston, Nigel King, Tim Dornan, Gerard Gormley

Introduction: Developing empathy is crucial in medical education. Studies have suggested that theoretical learning of empathy is less effective than experiential learning. So is there a way for students to have a learning experience to develop their empathy?

Aims: To use novel melanoma tattoos to see if students learn anything about the lived experience of a cancer diagnosis.

Methods: As a phenomenological study, we recruited 10 4th year medical students. Participants had a melanoma transfer tattoo applied to their forearm and listened to an audio narrative of a patient who had been diagnosed with melanoma. Participants were then asked to go about their typical day and make audio-diary recordings. Following this they were interviewed. Template Analysis was used to qualitatively analyse the data.

Results: Four main themes were derived: (1) Cancer simulation: opening up new experiences; (2) Drawing upon past experiences; (3) A transformative induction into patient-hood; (4) Doctors in the making: seeing cancer patients in a new light.

Discussion: This study provides insights into medical students' experiences of 'living' with a simulated cancer diagnosis. The simulation technique used in this study appears to facilitate a realistic and embodied learning experience which may affect future practice.



Atypical bilateral femoral fractures secondary to bisphosphonate use; a diagnosis to pre-empt?

M Arneill, I Jidaal, D Dawson, D Kealey

Case Study: We present the case of a 44 year-old lady who sustained bilateral simultaneous subtrochanteric femoral fractures following a fall from standing height. The patient had a history of bronchiectasis and allergic bronchopulmonary aspergillus. She had been commenced on the oral bisphosphonate, Alendronic Acid, 7 years previous due to osteopenia. She reported a 3-month history of bilateral thigh and hip pain preceding her fractures. Sciatica was suspected and investigated with a lumbar-spine x-ray. The patient underwent bilateral femoral intramedullary nailing and has made a good recovery to date. The bisphosphonate was discontinued.

Discussion: This case highlights an important differential diagnosis of stress fracture in an at-risk patient that initially presented with thigh pain. Bisphosphonate use is common in patients with, and at risk of, osteoporosis¹. Evidence from observational studies suggests an increased relative risk of atypical femur fractures in long-term users of bisphosphonates². All patients commenced on a bisphosphonate should be warned regarding this risk. Symptoms of thigh/hip pain should prompt consideration of developing femoral stress fracture and may be investigated with plain x-ray of the femur in the first instance. Treatment options include protected weight-bearing and prophylactic nailing.

References: 1. Abrahamsen Bo, Eiken Pia, Prieto-Alhambra Daniel, Eastell Richard. Risk of hip, subtrochanteric, and femoral shaft fractures among mid and long term users of alendronate: nationwide cohort and nested case-control study. *BMJ* 2016; **353** :i3365. 2. Shane E, Burr D, Abrahamsen B, *et al.* Atypical subtrochanteric and diaphyseal femoral fractures: second report of a task force of the American Society for Bone and Mineral Research. *J Bone Miner Res* 2014; **29**:1-23.

Improving the Prescribing of Antimicrobials in the Northern Ireland Regional Trauma Centre

Stephen F McAleer

Introduction: The Strategy for Tackling Antimicrobial Resistance (STAR 2012-2017) was launched by the Department of Health to promote optimal prescribing through professional education and monitoring antimicrobial usage, which were examined in this audit.

Aims: Ensuring adherence to antimicrobial guidelines, review of antibiotic choice and timely switch or discontinuation of IV antibiotics.

Methods: An audit tool was developed in partnership with the Belfast Health and Social Care Trust (BHSCT) Antimicrobial Stewardship Committee. All inpatients receiving antibiotics were included. Data collection took place on three separate occasions over three months; 62 inpatients were included. Sepsis screening, antibiotic choice, documentation and stewardship were assessed. An antimicrobial stewardship poster was created, and discussion of antibiotics was embedded in to daily handover and ward rounds. Second and third audits were completed after each intervention.

Results:

	Audit Cycle	Audit Result
Antimicrobial Adherence	1	78%
Antimicrobial Adherence	2	83%
Antimicrobial Adherence	3	96%

Discussion: Following this project, communication on antimicrobial stewardship occurs daily; documentation and practice is reviewed, and this area has vastly improved. In order to make this change

sustainable, an antimicrobial information pack was developed for junior doctors in the Trauma Centre.

Poster Presentations

CLINICAL RESEARCH

Lymph node harvest in colorectal cancer: A comparison between laparoscopic and open approaches

Robert Spence

Introduction: Lymph node harvest is important for staging colorectal cancer, determining the requirement for adjuvant chemotherapy, and predicts survival.

Aims: To investigate lymph node harvest in colorectal cancer resections, comparing laparoscopic and open approaches.

Methods: Data were obtained from a prospective database of patients with colorectal adenocarcinoma over a 4-year period (2011-2015). Resections were grouped: right-sided (right hemicolectomy; extended-right hemicolectomy); left-sided (left hemicolectomy; sigmoid colectomy; Hartmann's); rectal (anterior resection; APR).

Results: There were 178 resections over the 4-year period, with 169 cases eligible for inclusion (M: F 113:65); mean age: 71 years (range 43-89). 122 laparoscopic and 47 open resections were performed, with mean node harvest for laparoscopic: 18.9 nodes; open: 19.5 nodes (P=0.634; CI-3.06-1.87).

There were 71 right-sided resections (53 laparoscopic; 18 open) with mean harvest for laparoscopic: 20.3 nodes; open: 20.1 nodes (P=0.920; CI-4.03-4.47). 26 left-sided resections were recorded (19 laparoscopic; 7 open) with mean laparoscopic harvest: 16.4 nodes; open: 19.3 nodes (P=0.495; CI-12.40-6.56). 72 rectal resections were performed (50 laparoscopic; 22 open) with mean node harvest for laparoscopic: 18.3 nodes; open: 19.0 nodes (P=0.677; CI-4.13-2.70).

Discussion: There was no statistically significant difference demonstrated in nodal harvest between open and laparoscopic surgery for all types of colorectal cancer resections.

Reoperation Risk Factors for Endometriosis

Cathy Malone

Introduction: We reviewed patient demographics for women undergoing laparoscopic surgery for endometriosis, to counsel patients about their prognosis and reoperation risk.

Aims: To identify reoperation risk factors for endometriosis

Methods: Retrospective chart, electronic and histopathology record review for excisional surgery over six years by two laparoscopic surgeons in the gynaecology department of a UK DGH (108 patients).

Results: Average age was 31 years, average parity 0 and average BMI 26. Psychomotor co-morbidities coexisted in 41%; depression 31%, IBS 17% and fibromyalgia 5%. Patients ≤ 30 years had higher reoperation rates (OR 2.47 [95% C.I. 1.08-5.61], p=0.03). There was no association with operator and reoperation rate (RR 0.96 [95% C.I. 0.55-1.67], p=0.89) or use of adjunctive hormonal therapy (OR 1.40 [95% C.I. 0.61-3.15] p=0.41). IBS was associated with reoperation but was not statistically significant (OR 2.33 [95% C.I. 0.83-6.52] p=0.10). Patients with depression did not have greater reoperation rates (OR 1.51 [95% C.I. 0.61-3.72] p=0.36), or those with a combination of fibromyalgia and IBS (OR 1.35 [95% CI 0.21-8.48] p=0.74).



Discussion: Only age ≤ 30 was associated with reoperation; other factors including operator, BMI and parity were not. The perception that patients with psychomotor comorbidities have poorer outcomes is not reflected.

A qualitative analysis of Consultant Psychiatrists' attitudes to the diagnosis of Emotionally Unstable Personality Disorder (EUPD) and its disclosure to patients: why do they delay?

Ryan McNamara

Introduction/Aim: EUPD is a controversial yet common mental disorder affecting 1-2% of the population. We explored why Psychiatrists are reluctant to diagnose EUPD and disclose it to patients.

Method: A thematic analysis of transcribed, semi-structured interviews with four Consultant Psychiatrists was performed in 2016.

Results: Emerging themes showed the immense stigma that both Psychiatrists and patients associate with this disorder. There is still a lack of training, therapeutic options and support available to Psychiatrists in managing patients with this condition, leading to a reluctance to disclose the condition to patients. Important relational processes also occur between the Psychiatrist and patient that appear to limit the clinician's ability to reflect, formulate a diagnosis and disclose it to the patient.

Discussion: The study shows the need for improvement in training so that Psychiatrists can employ a psychotherapeutic framework in understanding patients' behaviours and indeed, their own responses to patients. Personality disorder services and treatments need to be developed locally, to support Psychiatrists in their diagnosis, disclosure and treatment of patients with EUPD.

Royal Victoria Hospital Emergency Department Trauma Transfers 2015

Kevin McGarry

Introduction: Patients presenting to the Royal Victoria Hospital (RVH) Emergency Department requiring Plastic Surgery input are referred to the trauma clinic in Ulster Hospital Dundonald (UHD). Number of transfer / year, patient demographic and outcomes post transfer are unknown.

Aims: To identify reason for transfer, distance from home postcode to each site and outcome of transfer.

Methods: All 2015 transfers were reviewed. Patients anonymised by sex, age and home post code. Outcomes and average distance from home post code to UHD and RVH was calculated.

Results: 56 transfers in 2015 occurred. 42 males, 14 females, age range 8-74. 42 had operative management: 4 patients for nerve injuries, 3 for arterial injuries, 23 for tendon injuries, 18 for cosmetic injuries and 16 for plasticorthopaedic input. Mean distance from patient home postcode to RVH 9.13 miles and to UHD 13.9 miles, a statistically significant difference ($P > 0.05$).

Discussion: Despite patients travelling significantly further to UHD it is unclear if this has any impact upon outcomes. Considering the vast majority of patients went on to theatre, our study suggests that the current triage system is effective, but could perhaps be refined to prevent unnecessary transfers.

Informed Consent is not improved by the provision of written information

Scott McCain

Introduction: Determining what is appropriate patient consent is a clinical and medical-legal problem. Valid patient consent requires that the patient can recall, understand and weigh up information, thus facilitating effective decision making. Several studies report high patient satisfaction when informed consent occurs within the context of shared decision making.

Aims: To measure recall and understanding of consent information after a shared decision making consent process, and assess if written information improved patient understanding.

Methods: Patients diagnosed with inguinal hernia were consented in an outpatient setting using standardized information through a shared decision making process. Recall and understanding of consent information were objectively measured using a knowledge questionnaire after verbal information and again after written information.

Results: 100 patients (97 males) were recruited. Age was 57.7 (SD=14.0) years. Mean recall was 51.3% (SD=13.2) after verbal information and 51.6% (SD=12.45) ($p=0.88$) after written information. Mean understanding was 34.8% (SD=15.9) after verbal information and 36.9% (SD 15.23) ($p=0.28$) after written information.

Conclusions: Patient recall and understanding of informed consent information were worryingly low. Written information did not improve patient recall or understanding. Focused interventions are necessary to improve informed consent.

Long-term follow-up of male breast cancer.

Nicola McKinley

Introduction: Male Breast Cancer accounts for less than 1% of breast cancers with published overall and disease free survival being lower than in females.

Aims: To determine treatment and long term outcomes for male breast cancer in our unit.

Methods: A database has been maintained for all breast cancer patients diagnosed since 1993. Patients were identified using the database and data collated using the database and retrospective chart review. Male breast cancer patients were treated using similar principles to female breast cancer.

Results: From 1994-2009 twenty-four cancers were diagnosed in twenty-two patients. Mean age at diagnosis was 69. Twenty patients underwent mastectomy, two patients underwent wide local excision. No patients developed local recurrence. One patient died from their breast cancer with systemic metastases. 10-year overall survival was 22%, 10 year disease-specific survival was 80%. Other causes of death included co-morbidity and secondary cancers.

Discussion: Disease free survival in our unit is better than other published studies and is comparable to and even better than female breast cancer. High age at diagnosis and co-morbidity are the most important factors in determining overall outcome. Treatment pathways for male breast cancer should follow guidelines for females to optimise outcomes.

QUALITY IMPROVEMENT/PATIENT SAFETY

Neonatal Sepsis

Clare Morley, Hannah Smyth

Introduction: Neonatal sepsis is a serious cause of neonatal morbidity and mortality, accounting for 10% of newborn deaths. NICE published guidelines for neonatal sepsis management in 2015. The SEHSCT follows guidelines published in 2016 by the NI



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Neonatal Network. The major difference in the SEHSCT protocol is the inclusion of pre labour rupture of membranes and prolonged rupture of membranes at term (Pre & PROM) as two separate risk factors for sepsis.

Aims: Determine percentage of infants screened for Pre & PROM.

Identify the risk factors in infants who require a prolonged course of antibiotics/lumbar puncture.

Methods: Retrospective study. Data analysed from a 5 months period (Aug-Dec 15)

Results: Pre & PROM accounted for a third of infants screened and a third of infants requiring lumbar puncture/prolonged course of antibiotics.

Discussion: A significant proportion of infants are requiring antibiotics for Pre & PROM at term. A contributing factor is the obstetric protocols in the SEHSCT. In order to improve patient care and optimise patient safety we recommend combining Pre & PROM at term as one non red flag risk factor, instigating a period of enhanced observation monitoring and reviewing the obstetric protocols. This should result in change in practice and potentially a change in regional guidelines.

Dictation recorded at the RVH Fracture clinic; requiring internal fixation?

Matthew Arneill

Introduction: Good record keeping is essential for continuity in patient care and a requirement of the GMC. Record keeping in our busy fracture clinic is predominantly with the use of Dictaphones and tape. Anecdotal evidence existed of problems with missing dictation due to lost and poor quality tapes.

Aims: To determine the extent of missing dictation in patients attending consultant fracture clinics. Improve the quality of our record keeping by introducing electronic dictation and subsequently reassessing performance.

Method: Data was collected for 45 consultant clinics over a 4-week study period (March 2016) using a proforma. Electronic dictation software was then procured and is due for imminent introduction to fracture clinic.

Results: Data for 998 patients attending clinics was assessed. Of these, 113 had no dictation recorded from their last attendance. (11.3%). The location of the patients last attendance was Front-of-House (65.7%), Consultant Clinic (30.3%), other (3.9%).

Discussion: At present, missing recorded dictation from patient attendances is a significant problem. This data was presented at the M&M meeting. It is our expectation that the introduction of electronic dictation will result in an improvement in patient records and lead to better quality care. We await the results of our post-intervention assessment.

Appendectomy practice and outcomes in Northern Ireland

Scott McCain

Introduction: Appendectomy is the most common general surgical emergency operation. Numerous controversies exist, including rates of negative appendectomy, pre-operative imaging and laparoscopy. Practice and outcomes in Northern Ireland remain unknown.

Aim: To describe current practice and outcomes of appendectomy in Northern Ireland.

Methods: A prospective population-based study was carried out by a trainee research collaborative. Patients were recruited over two months in June and July 2016.

Results: Preliminary data are available for 134 patients (78 males) with a median age of 28.4 (IQR 14.0-41.3) years. Cross-sectional imaging was performed in 41(30.6%) patients and was diagnostic in 95% of these. A Consultant surgeon made the decision to operate in 51(38.1%) patients and was in theatre for 26 (19.4%) appendectomies. A laparoscopic approach was employed for 65 (48.5%) patients with a 3.1% conversion rate to open appendectomy. The negative appendectomy rate was 22.4%.

Conclusions: This multicentre study is the first to describe appendectomy practice in Northern Ireland. Use of cross-sectional imaging, a laparoscopic approach, and consultant input are less frequent than in similar published studies but the negative appendectomy rates are higher. Practice must change to standardise and optimise patient care in Northern Ireland.

An Accident Waiting To Happen – Handover Is Key To Inter-hospital Transfers

Sophie Davidson

Introduction: Inter-hospital transfers lengthen patient stay and increase mortality; however, they are integral to the functioning of the Belfast trust. From January - March 2016 there were 256 transfers to BCH from RVH alone. The BHSCCT inter-hospital transfer policy states patients must have verbal and written communication with the receiving unit. Initial audit showed RVH handed over only 48% of transfers, demonstrating a process that was sub-optimal and compromised patient safety.

Aim: To achieve a 100% verbal handover rate for patients transferred from RVH to BCH by June 2016.

Method:

- Transfer file started in BCH for data collection
- Percentage handovers received collected weekly (12/1/16–18/4/16)
- Patients excluded if not from RVH or missing data
- Teaching session for BCH on how to complete transfer lists.
- RVH sent contact number for BCH transfers.
- New transfer form requiring accepting Doctor's name placed on intranet.
- Regular email reminders to RVH staff.

Results: Median value found to be 56.5%, highest rate of 73%. Three implied trends: 1. Downward trend when transfers phone broken, 2. Noticeable decline during changeover week, 3. Upward trend when transfers phone re-established

Discussion: Handover rates continue to vary. No intervention showed a definitive improvement. Further work is needed across BHSCCT to ensure a safer, more effective transfer process.

Antenatal Aspirin Prophylaxis

Adeeb Khan

Introduction: Hypertensive disorders remain one of the leading causes of maternal and perinatal morbidity and mortality in the UK. NICE guidelines published in 2010 recommend aspirin for moderate to high risk patients.

Methods: An audit and re-audit of antenatal aspirin prophylaxis was

carried in Antrim Area Hospital. The objectives were to identify moderate and high risk patients and identify the proportion who received prophylactic aspirin in accordance with NICE guidelines.

Results: The initial audit in March 2015 had a cohort of 41 patients. Nine patients were high risk and did not receive aspirin. The re-audit was carried out 6 months later in September 2015.

Overall there has been an improvement in identifying moderate and high risk patients in accordance with the NICE guidelines and those who have received aspirin correctly, from 21% to 58%.

Discussion: The recommendations are to insert risk assessment tools at the booking visit for all antenatal patients, update community midwives, GPs and hospital staff. Another suggestion has been to have a laminated copy of the risk assessment tool in the consultation room wall. A re-audit is to be carried out in a further 6 months to monitor the progress of this unit.

Effective Utilisation of Pre-Operative Assessment for Elective Plastic Surgery Patients

Serena Martin

Introduction: The NHS modernisation agency states >80% of patients should be treated as a day case. Selection of appropriate patients occurs during pre-assessment, which only occurs if patients are referred. Pre-assessment clinic (PAC) allows patient optimisation for surgery. This can improve patient safety and lead to lower morbidity and mortality rates and effective use of resources.

Aims: To establish current practice with regards to utilisation of pre-assessment clinics in elective plastic surgery patients and introduce guidelines to ensure appropriate patient referral.

Methods: Prospective audit of all elective plastic surgery patients admitted over a one week period.

Results: Only 31% were pre-assessed. 91% of patients not pre-assessed should have been (ASA grade 3/4). 38% of patients were admitted as a day case despite 100% of patients being suitable for day case surgery.

Discussion: Disappointing results led to consultation with anaesthetists and pre-assessment staff. A new department guideline has been implemented. This identifies patients who necessitate PAC referral and demonstrates the referral process as well as highlighting key information which must be included to allow timely pre-assessment and patient optimisation. Better utilisation will ensure patient optimisation, reduced cancellation of operations and facilitation

Suitable indications for elective Colonoscopy and Flexible Sigmoidoscopy

Victoria Rizzo

Colonoscopy and Flexible Sigmoidoscopy are essential tools for investigation, diagnosis and treatment of colorectal disease.

Aim: To assess validity of indications for Colonoscopy/Flexible Sigmoidoscopy using guidelines by the British Society of Gastroenterology BSG, AUGIS and ACPGBI.

Method: Indications and an outcome summary was compiled for elective endoscopies performed during one month of practice.

Results: 61 colonoscopies and 25 flexible sigmoidoscopies were considered. 19.7% of colonoscopies had no valid indication. No abnormalities were detected in 33.3% of non-indicated colonoscopies as compared to 26.5% of those indicated.

16% of the 25 flexible sigmoidoscopies had no valid indication.

The most common indication (52.4%) was rectal bleeding with no bowel habit change in patients >40years. Almost 15% of indicated flexible sigmoidoscopies had criteria valid for a full colonoscopy: surveillance after resected colorectal cancer (14.3%), adenomas and FAP (4.8%).

Discussion: The guidelines emphasise that clinical judgement remains key to decision making when booking endoscopies¹. However, in the non-valid colonoscopy cohort a high percentage of procedures were normal. Furthermore the results suggest that procedure selection (colonoscopy vs sigmoidoscopy) may be improved by referral to guidelines. This is especially relevant in follow up of colorectal carcinoma and FAP, where colonoscopy is recommended as per NICE guidelines².

References: 1. British Society of Gastroenterology BSG, AUGIS and ACPGBI. Guidance on the indications for diagnostic upper GI endoscopy, flexible sigmoidoscopy and colonoscopy. Position Statement. 2011. Available at: http://www.bsg.org.uk/images/stories/docs/clinical/guidance/indications_diagnostic_endoscopy_13.pdf

2. NICE guidelines. Colorectal cancer: Diagnosis and management. Last updated December 2014. Available at: <https://www.nice.org.uk/guidance/cg131/>

The assessment of Plastic Surgical Trainees attitudes and behaviours in communicating with temporary voiceless (TV) head and neck cancer patients

Joshua Clements

Introduction: Communicating with a temporarily voiceless head and neck cancer patient presents a unique communicative challenge for some surgical sub-specialties. Little is known about the best means of communication or the attitudes of patients or clinicians. Effective communication is an inherent part of Good Medical Practice and the ISCP curriculum for trainees.

Aims: To identify attitudes and behaviours of plastic surgical trainees in communicating with TV patients

Methods: A 32-question survey was sent to all plastics surgical trainees in Northern Ireland in a one-year period. (August 2015 - August 2016). Attitudes and behaviours were assessed using a 5-point Likert scale.

Results: 15 (83%) trainees responded. No trainee had received formal training in how to communicate effectively with a TV patient. The majority of trainees found communicating with a TV patient time consuming, more difficult and have had to adapt their ways of communicating. All trainees agreed to trialling information technology (IT) devices and would be open to formal teaching.

Discussion: We have identified a need for further education in communication for trainees and support of the introduction of IT devices. Further research into patient attitudes and behaviours is required to allow for correlation

Mentoring is a key tool for personal and professional development

Lyndsay Thompson

Introduction: Mentoring is a key tool for personal and professional development, with a range of benefits described for mentees, mentors and their organisations¹.

Recently many peer-mentorship programmes have been developed throughout the UK². Within Northern Ireland a paediatric peer mentoring programme commenced in 2014.

Aims: To review trainee engagement throughout the NI paediatric mentorship programme, in response to various interventions and adjustments.

Method: Online questionnaires and focus groups were conducted to



assess engagement and satisfaction throughout the programme. In response to feedback, various changes were implemented, including setting minimum numbers of contacts, introducing e-diaries, an induction evening for mentees, and changing from mandatory to voluntary mentee recruitment.

Results: Within the 2014-2015 year of the programme, there were low levels of engagement. After changes were made, levels of engagement improved well in the second year. Overall, ninety two percent found the mentorship programme beneficial.

Discussion: With many new peer mentorship schemes being developed, quality improvement measures need to be implemented to support trainee engagement. We have found that small changes to the programme structure have improved trainee engagement. However more areas still need to be developed, and only with continuing adaptation will we be able to help our trainees get the most out of mentorship.

References: 1. Department of Health (2004) 'Mentoring for doctors: signposts to current practice for career grade doctors'. 2. RCPCH: Mentoring Support. Available at: <http://www.rcpch.ac.uk/training-examinations-professional-development/careers/career-development/mentoring-support/> Accessed September 2016.

Accurate body weight recording in a Trauma and Orthopaedics ward: a quality improvement project

Jonathan Rooney, Ruth Wallace, Paul Cooper, Anna Durkan, Aisling Carroll-Downey.

Introduction: Patient body weight is an essential parameter in safe medication management. Drugs requiring weight-adjusted doses are often prescribed and administered without a recorded weight. We investigate the recording of patient body weight on the drug chart in a Trauma + Orthopaedics ward in RVH, Belfast.

Aim: Accurate body weight recorded on the drug chart of 100% of patients in the T&O ward.

Method: The current practice of weight recording on the drug chart was audited. Following this, an informal session with the nursing team was held to promote weight recording. This was succeeded by a formal teaching session where potential barriers to accurate weight measurement were explored using an anonymous questionnaire. "Weigh Day" was introduced whereby each Saturday would be assigned as a day for recording patient body weight.

Results / Progress: The results of the initial data collection are shown in Figure 1, and the first 3 PDSA cycles in Figure 2 (not included in abstract).

Discussion: Following implementation of the 'Weigh Day' initiative, documentation of accurate body weight on the drug chart increased from 4% to 73%. The number of patients without recorded body weight decreased dramatically to less than 20%. We plan to extend the project across all T&O wards in the future.

Appreciating Clinical Excellence: A positive feedback tool

Danielle Leemon

Introduction: Traditionally patient safety has focussed on learning from errors. A more positive alternative is to highlight what is done well by individuals and adopt this behaviour as a team to increase the standard of care as a whole.

Aims: 1. To nurture a culture of positive feedback. 2. To create a feedback tool to complement appraisal/revalidation. 3. To improve staff morale. 4. To identify areas for improvement through analysis of feedback.

Methods: A postcard template was created with 3 questions: 1. Who

did well? 2. What did they do well? 3. What can we do to develop excellence in this area? The postcards are available to all staff and deposited in a box. An electronic certificate is presented to the nominated people along with formal feedback. We aim to analyse trends and categories and use appreciative inquiry to investigate the most important reports. We hope to then identify areas of focus for improvement and provide constructive feedback for all staff as part of their continuing professional development.

Results: The project is currently in the design phase.

Discussion: We hope to expand this regionally within our specialty and then hopefully extend this to other specialties.

Foundation Doctors' First Steps to Leadership

Grainne Donaghey

Introduction: Foundation doctors routinely encounter problems relating to patient care and are well placed to identify solutions and lead improvement strategies.

Aim: We identified a lack of training programmes to support foundation doctors in leading improvement within Belfast Health and Social Care Trust (BHSCT). We developed the First Steps to Leadership (First Steps) Programme with the aim of improving foundation doctors' skills in clinical leadership and quality improvement (QI).

Method: First Steps was piloted across BHSCT from October 2015 – June 2016. The programme includes ten monthly workshops which align with online learning modules facilitated via the Institute for Healthcare Improvement Open School and experiential learning through completion of small group QI projects.

Results: Thirty-three foundation doctors completed the programme. Post-programme questionnaires displayed

An Audit on the use of AKI risk assessment tool as part of the medical proforma at Daisy Hill Hospital.

Eimear Joyce;

Introduction: Acute kidney injury (AKI) is a common occurrence during hospital admission. It is often defined as sudden loss in kidney function resulting in retention of urea and other nitrogenous waste products. AKI during hospital admission correlates with a significant rise in morbidity. Furthermore it costs the NHS approximately £50million per annum in Northern Ireland alone. Utilising a risk assessment tool as part of the admission assessment can identify patients at risk of developing AKI and thus prevent it occurring.

Aims: To highlight how frequent AKI presents during hospital admission, To access how often the AKI risk assessment tool is used as part of patient assessment on admission, To access how often the AKI management plan is completed

Methods: Random sampling of 50 medical patients across three medical wards.

Results: 30% of patients had the risk assessment completed on admission.

Discussion: We have since implemented change to the medical proforma and have re-audited to see if there is an improvement in our ability to prevent, recognise and manage AKI in medical patients at the time of admission to hospital.

Multidisciplinary algorithm for category 1 caesarean sections; a collaborative service improvement

Helen Murray

Introduction: Review of serious adverse incidents within our institution highlighted a requirement to improve the approach to category 1 sections.

Aim: To improve pertinent areas identified including documentation, clarity in communication, and availability of staff.

Methods: A retrospective chart review of Category 1 caesarean sections were undertaken. Informal structured interviews and focus group discussions were carried out with each MDT group to identify pertinent issues.

Results: Just over half the cases (58%) had the decision clearly documented, with 64% of cases in agreement between anaesthetic and obstetric records. One of the most significant issues identified by staff was the availability of anaesthetic nurse assistance out of hours.

Discussion: The issues specific to our individual institution were considered and challenged in a collaborative approach. Initially the anaesthetic assistant was added to the team emergency pager, and this pager also used to declare every category 1 section. An algorithm was subsequently developed, combining this service improvement, which streamlined the overall approach to the process. Achieving this level of agreement between all specialty members marks a significant step in our unit's approach of learning from previous events, to improve safety and patient care.

Oral health status of Northern Ireland's head and neck oncology patients: a 10-year audit.

Ciaran Moore

Introduction: 1. All head and neck cancer (HANC) patients must undergo oral assessment to ensure adequate dental fitness pre-radiotherapy. 2. Post-radiotherapy HANC patients are at increased risk of dental caries.

Aims: Determine the oral health status of pre- and post-radiotherapy HANC patients in Northern Ireland between 2004 and 2014.

Methods: Health and care numbers of all HANC patients diagnosed between 2004-2014 were obtained from the Northern Ireland Cancer Registry. Dental records of patients also registered with the Centre for Dentistry, Belfast, were reviewed.

Results: Between 2004 and 2014, 504 patients attended for pre-radiotherapy dental assessment. 57% of patients had dental caries, with a mean of 3.6 carious teeth. 46% required at least one tooth extraction, with an average of 5.4 teeth removed per patient. Approximately half of post-radiotherapy patients had evidence of dental caries (49%). Patients with tongue cancer had a greater number of mean carious teeth (6.4) than patients with tonsillar (4.5) or laryngeal (3.6) cancer. There was an overall decline in the mean number of carious teeth in post-radiotherapy patients from 2004 to 2014.

Discussion: Head and neck cancer patients present with significant oral disease pre- and post-radiotherapy. Improvements in radiotherapy technology and the dental care pathway may account for a reduction in post-radiotherapy dental caries from 2004 to 2014.

STUDIES IN MEDICAL EDUCATION

Medical Education in Palestine: The need for alternative pedagogical approaches during conflict

Emma Keelan

Introduction: Violent instability infringes upon access to medical education for many undergraduate students. The Israeli-Palestinian conflict is such an example where violence, transport issues, class cancellations and campus evacuations result in disruptions to student learning.

Aims: October 2015 saw an increase in hostilities in the Palestinian territories. Consequently there was a need to adopt flexible pedagogies to ensure students remained up to date with their studies. Palestinian students, like their peers globally, use smartphones to communicate and share information. As such, an online portfolio was developed as a means of disseminating the Clinical Physiology course material.

Methods: To assess the benefits of such a program, student marks were analysed before and after the implementation of the portfolio to ascertain if the change in pedagogy proved useful to students.

Results: Thirty-nine demonstrated an improvement in their marks using the online program (72.2%); The greatest improvement between the pre and post initiative examinations was eight marks (40%).

Discussion: The use of social media & online learning materials proved to be effective pedagogical tools for students studying medicine in areas of uncertainty. In the future, online resources could be considered in similar circumstances where conflict and violence disrupt access to education.

Fourth Year Medical Student Perception of the Use of Visual Likert Scales to Self-Identify their Learning Needs during the Ageing and Health Module

Grace Kennedy

Introduction: The General Medical Council recommends students seek benefit from self-assessment and reflection¹. Although students find self-assessment helpful in steering learning², they do not automatically consider their learning needs.

Aims: A Visual Likert Scale (VLS) method was used to track the outcome of student-perceived self-assessment at the beginning and end of the Ageing and Health module.

Methods: Fourth year students (252) were invited to complete the VLS to assess self-perceived learning needs for key areas of the curriculum at the beginning and end of the module. The areas were history-taking and skills, examination skills, medications, co-morbidity, nutritional assessment, and swallowing assessment. Values were compared before and after the module. Student focus groups explored issues surrounding VLS use.

Results: Significant improvement for each area was demonstrated. Key focus groups themes included ease of VLS use, its use in identifying learning needs, and potential future uses.

Discussion: The results demonstrated increased student-perceived competencies after the module. VLSs were generally viewed positively and suggestions for VLS use were identified.

References: 1. GMC, 2010. http://www.gmc-uk.org/Assessment_in_undergraduate_medical_education_0211.pdf_48902978.pdf 2. Mattheos N, Nattestad A, *et al. Med Educ.* 2004;38(4):378-89.

Formation and output of a regional surgical research collaborative

Gareth Irwin

Introduction: Trainee-led regional networks can facilitate research through a novel, collaborative approach. We report the establishment and output of the Northern Ireland Surgical Research Collaborative, the first trainee collaborative formed in Northern Ireland.



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Aims: To evaluate if a trainee research collaborative could be established in Northern Ireland and if it could deliver good quality research.

Results: After four meetings and a two-month period of research, over a total of six months, the first trainee-led prospective audit has been completed, submitted for presentation and prepared for publication.

The strengths of this model were identified as having an enthusiastic cohort of trainees available to gather data, choice of topic acutely relevant to trainees and increase in the profile of research amongst the surgical community.

Weaknesses identified included multiple site rotas limiting accurate and timely follow-up, loss of momentum from some members of the collaborative and lack of wider infrastructure to support ongoing research.

Discussion: This process confirms that good quality research can be carried out when initiated and undertaken by trainees, given that trainees can be in frequent contact with each other, are motivated, and require formalised evidence of research and audit

Northern Ireland Basic ENT, a new course and its experience

Shanna Leonard

Introduction: ENT trainees are expected to have a sound knowledge of common conditions. However, teaching and assessment of these conditions are not equally emphasized during medical school nor as part of the foundation programme curriculum. We developed a one day intensive course for the upcoming junior trainee into the department.

Aim: To develop a course that will reinforce current trainee knowledge and skill sets for the specialty.

Method: A one day course curriculum, including didactic lectures and hands-on skill stations, was designed based on round-robin scheduling. The lectures and skill stations were aimed at basic otology, rhinology and laryngology disease. A pre-course survey and post-course survey was collected after the course. Unpaired t-test were performed on the data with $p < 0.05$ being significant.

Results: Pre and post course surveys were completed, and results overall showed an improvement in knowledge and ability to deal with various ENT conditions. Free text feedback was positive.

Discussion: A combination of lectures and practical teaching in this case has proven to be effective. The use of simulated learning is also a key tool when learning new skills. Our aim for this course is to continue to teach trainees upcoming to ENT to enable them to effectively and safely treat patients.

Medical student Resilience: A cross-sectional study

Michael Doris

Introduction: Resilience has been described as the capacity to 'bounce back' from adversity. The relevance of this to medical training has become recognised by the GMC, who recommend that medical schools make resilience training an 'integral part' of the medical curriculum.

Aims: To establish a baseline of subjective resilience in 1st year medical students.

Methods: First year medical students attended targeted 'resilience workshops'. The sessions covered practical areas of resilience training for student life and specific medical student issues. Prior to these sessions students filled out the Connor-Davidson Resilience

Scale (CD-RISC), Perceived Stress Scale, Budner's Tolerance of Ambiguity and the Warwick-Edinburgh Well-Being scale to measure baseline levels of resilience and other personality traits.

Result: 248 of the 268 students 93% attended the sessions - of which 228 completed the questionnaires. Mean scores for resilience (73.64) were slightly higher than equivalent populations. Higher levels of resilience correlated with better scores of global well-being and lower perceived stress.

Discussion: This study suggests that first year medical students are in fact relatively resilient. Our results support, evidence that higher levels of personal resilience as scored on the CD-RISC correspond with higher levels of self-reported wellbeing

Does Precision Teaching Enhance Dermatology diagnostic skills?

Conor McGrath

Medical students often lack confidence in assessing/diagnosing skin conditions thus new teaching methods are required to enhance knowledge acquisition. Precision Teaching (PT) is an educational technique that can improve knowledge retention by using frequent, brief, timed measures of student performance on specific learning points e.g. multiple dermatological images.

Aims: To determine the impact of PT on dermatology diagnostic skills compared to traditional teaching.

Methods: Third year medical students were randomly allocated to the intervention group (PT + traditional teaching) or control group (traditional teaching). For the PT group, we designed 50 image flashcards. Flashcard practice during timed one minute periods took place 2-3 times/teaching day and students' data on accuracy was recorded. Pre + post-training tests were carried out to determine the impact of PT on students' diagnostic skills.

Results: 135 participants were randomised to the intervention (n=70) or control groups (n=65). Analysis of covariance was used to calculate the 'change score' (comparing pre- and post-test). Compared with the control group, there was a statistically significant improvement of 8.8% (95% CIs; 4.9-12.7, $p < 0.001$) in the intervention group.

Discussion: Our study demonstrates a positive effect of PT on dermatology diagnostic and recognition skills.

CASE REPORTS / SERIES

Rare benign metastasising leiomyomas of the lung

Victoria Rizzo

Introduction: Benign metastasising leiomyoma (BML) is a rare disorder involving distant metastases secondary to a primary smooth muscle tumour of the myometrium. Most literature is available in the form of case reports.

This case report describes a 48 year old woman with multiple pulmonary nodules noted on routine chest x-ray. She had a total abdominal hysterectomy 6 years prior to the scan, for multiple benign fibroids of the uterus. CT FNA of the pulmonary nodules showed abnormal smooth muscle proliferation within lung parenchyma, suggesting smooth muscle tumour confirmed with immunohistochemistry.

Discussion: BML lesions are most often found incidentally in lung tissue; however metastases to abdominal lymph nodes, oesophagus, trachea, striated muscle, nervous system, heart and breast have also been described¹⁻⁴. Metastatic spread is thought to be haematogenous in nature^{5,6}. Growth of pulmonary metastases secondary to uterine



leiomyoma are affected by oestrogen and progesterone levels² and metastases are often positive for hormone receptors⁶.

Due to low case numbers, management is still controversial. Hormone therapies (e.g. tamoxifen, aromatase inhibitors), chemical and surgical castration have been used in the management of BML^{1,2,7}. Spontaneous regression of the pulmonary metastases has been described after the onset of menopause⁸.

References: 1. Chen S, Liu RM, Li T. Pulmonary benign metastasizing leiomyoma: a case report and literature review. *J Thorac Dis.* 2014;**6**(6):E92–E98. 2. Ji HJ *et al.* A Case of Benign Metastasizing Leiomyoma with Multiple Metastasis to the Soft Tissue, Skeletal Muscle, Lung and Breast. *Korean J Intern Med.* 2006;**21**(3):199–201. 3. Gun Y *et al.* Benign Metastasizing Leiomyoma with Multiple Lymph Node Metastasis: A Case Report. *Cancer Res Treat.* 2011;**43**(2):131–133. 4. Takemura G *et al.* Metastasizing Uterine Leiomyoma: A Case with Cardiac and Pulmonary Metastasis. *Pathol Res Pract.* 1996;**192**(6):622–629. 5. Fu Y, Li H, Tian B, Hu B. Pulmonary benign metastasizing leiomyoma: a case report and review of the literature. *World J Surg Onc.* 2012;**10**:268. 6. Patton KT *et al.* Benign metastasizing leiomyoma: clonality, telomere length and clinicopathologic analysis. *Mod Pathol.* 2006;**19**:130–140. 7. Rivera JA, Christopoulos S, Small D, Trifiro M. Hormonal Manipulation of Benign Metastasizing Leiomyomas: Report of Two Cases and Review of the Literature. *J Clin Endocrinol Metab* 2011;**89**(7):3183–3188. 8. Arai T, Yasuda Y, Takaya T, Shibayama M. Natural Decrease of Benign Metastasizing Leiomyoma. *Chest.* 2000;**117**(3):921–922.

Myxedema Madness: a neurological manifestation of hypothyroidism

Hannah Smyth, George Graham

A 36 year old woman, with no previous contact with mental health services was referred to psychiatry after an acute psychotic episode. Bloods were carried out which showed gross hyperthyroidism. On subsequent physical examination, she had generalised myxedema, a boggy thyroid and thinning hair and had had weight gain, cognitive slowness & intolerance to cold in the preceding months. Advice was sought from endocrinology and she was commenced on thyroxine. Over weeks of treatment with thyroxine & haloperidol her delusions resolved and her mental state recovered.

Discussion: This case was complicated as she had just given birth to her first child by emergency section & had other contributing factors including stressful job as a probation officer. Her delusions centred around her baby & she believed that she and her daughter would come to harm. The initial impression was puerperal psychosis and she was managed in the community. It was only when her mental state deteriorated and she was admitted to the ward that thyroid function was checked. This case highlights the need for awareness of physical causes of psychosis & also the wide variety of manifestations that thyroid dysfunction can present with.

BASIC SCIENCE/ RESEARCH

Use of Well-differentiated Paediatric Nasal Epithelial Cell (WD-PNEC) Cultures to study Respiratory Syncytial Virus (RSV) infection in newborn infants

Helen Groves

Background: Preterm infants and young infants are at greater risk of severe RSV-related disease. Little is known regarding innate immune responses of airway epithelium to RSV in these

groups. We aimed to establish WD-PNEC cultures from term and preterm infants at birth and characterise morphology and RSV cytopathogenesis.

Methods: Nasal epithelial cells from term and preterm infants were obtained within hours/days of birth. Paediatric nasal cells were grown under an air-liquid interface until formation of a pseudostratified columnar epithelium with extensive cilia coverage and mucous production. WD-PNECs were infected with a clinical isolate of RSV. Culture morphology was examined by fluorescent microscopy. Chemokine/cytokine secretions and qRT-PCR of targeted genes comparing responses to RSV in preterm and term derived WD-PNECs is underway.

Results: Newborn WD-PNEC cultures with extensive cilia coverage and mucous production were successfully generated. Proportions of ciliated and goblet cells were similar in term and preterm WD-PNECs. Following infection of newborn WD-PNECs, similar RSV growth kinetics to that previously reported in WD-PNECs derived from older infants, were observed.

Conclusion: The successful culture of WD-PNECs from new-borns represents a unique opportunity to study RSV cytopathogenesis and innate immune responses in early life.

Periodontal ligament stem cell osteoblastic response to nanostructured titanium surfaces

Lewis Winning

Introduction: Bioactive materials offer particular clinical benefits in the field of dental implantology, where differentiation of stem cells towards an osteoblastic lineage is required for osseointegration and appropriate function of implants in vivo.

Aims: The aim of this study was to evaluate the osteoblastic response of Stro-1+ve periodontal ligament stem cells (PDLSCs) to three well-characterised biomaterial surfaces: an abraded titanium surface control (cpTi); a polycrystalline titanium surface, with both micro and nano-topography produced by radio frequency magnetron sputtering (TiTi); and the same surface incorporating a sputter deposited calcium phosphate coating (CaP-TiTi).

Methods: PDLSCs were grown on each surface in the absence of supplementary osteogenic-inducing agents. Osteoblastic responses were assessed for up to 21 days in culture by measuring gene expression using real time q-PCR and via assessment of intracellular alkaline phosphatase (ALP) activity.

Results: The CaP-TiTi surfaces were non-stoichiometric, carbonated, and calcium rich with a Ca/P ratio of 1.74. Gene expression analysis for the CaP-TiTi surfaces showed a significant late stage up-regulation of Secreted Phosphoprotein 1 combined with a late stage down regulation of ALP (gene expression). There was also a significant increase in intracellular ALP at day 21 for the CaP-TiTi surface. These data suggest that the CaP-TiTi surfaces provide the bioactive conditions required for direct osteoblastic differentiation of PDLSCs.

