

Abstracts

Annual Trainee Doctors' Prize Day, Thursday 19th November 2017.

Postgraduate Centre,
Belfast City Hospital



ORAL PRESENTATION

Triage Bloods QIP

Lorraine Bouzan, Elaine Quigley, Emma Wilkinson

Introduction: Blood tests are one of the most common investigations which are undertaken in Emergency Departments. We suspected that our Emergency Department was undertaking unnecessary blood tests.

Aims: We aimed to undertake a quality improvement project to reduce the amount of inappropriate blood tests and standardise indications for doing them.

Methods: We first targeted coagulation screens. We were performing an average of 409 per week. On a sample audit of twenty of these, only one was clinically indicated. Of the 8 were abnormal, none were repeated or changed management. We defined criteria for coagulation screen testing according to guidelines. Our first PDSA Cycle involved removing coagulation screens from inappropriate blood bundles.

Results: We reduced the number of coagulation screens by an average of 100 per week saving our department approximately £37260 per year. Further PDSA cycles are now complete including daily staff education and we have also begun targeting other blood tests.

Discussion: We would like to share our learning so that this can be replicated by other hospitals

We will explain the methods behind each of these PDSA Cycles and how we were able to achieve a significant change through staff education, engagement and motivation.

ORAL PRESENTATION

Assessment of Junior Doctor Confidence in Chest Drain Management Introduction

Emma Keelan, Nicholas Magee

Chest drains are inserted for pleural effusion and pneumothorax management. British Thoracic Society guidelines state patients with chest drains should be managed by experienced individuals. Yet, junior doctors are expected to manage chest drains, often without previous training.

Aims: This study aims to establish junior doctors' level of competence with chest drain management.

Method: An on-line questionnaire-based study was conducted involving foundation and core trainees (n=20) assigned to a Belfast respiratory ward from August 2016 - February 2017. Information was sought regarding junior doctors confidence in chest drain management; specifically indications and contraindications to insertion, understanding of 'swinging' and 'bubbling' and knowledge regarding drain clamping and flushing.

Discussion: Post registration trainees (post FY1) accounted for 65% (13/20) of respondents. Average confidence level regarding chest drain management was 2/10. Doctors felt further education was required on indications and contraindications for drain insertion (55% and 70% respectively). Drain swinging/bubbling could not be assessed by 80% of respondents.

Procedurally, only 20% were of respondents were capable of clamping a drain and 15% flushing. Junior doctors felt most comfortable (35%) reviewing drain position on chest radiographs.

This study supports the need for further education of junior doctors regarding chest drain management.

Insulin Signalling in Vascular Endothelial Cells is Suppressed by CITED2

Sam Lockhart, Xuachun Wang, Thomas Rathjen, Ditte Sorensen, Susan Dunwoodie, Lars Rassmussen, Christian Rask-Madsen

Aims: Endothelial cell insulin signalling regulates vascular inflammation and angiogenesis. Because hypoxia—inducible factor (HIF) regulates insulin signalling. We studied the role of CITED2, a negative regulator of HIF activity, on endothelial cell insulin signalling.

Methods: Cre-Lox technology was used to generate mice with endothelial cell specific knockout of CITED2 (EC-CITED2--KO).

Results: In cultured endothelial cells, loss of CITED2 selectively enhanced Akt--dependent insulin signalling,



increasing pAkt/tAkt almost 3-fold ($P < 0.05$, $N = 4$), potentially via a 3-fold upregulation of IRS2 ($P = 0.056$, $N = 3$). Consistent with a role for CITED2 as a pathogenic factor in endothelial insulin resistance, CITED2 mRNA was upregulated 2-fold in FACS-sorted cardiac endothelial cells from obese mice ($P < 0.05$) and CITED2 protein was elevated 3.8-fold in arterial tissue from patients with type 2 diabetes versus controls ($P < 0.05$). Importantly, aortic Akt-phosphorylation after *in vivo* treatment with insulin (5U) was significantly upregulated in EC-CITED2-KO mice compared to controls ($P < 0.01$), demonstrating that CITED2 regulates vascular insulin signalling *in vivo*.

Conclusion: CITED2 is a novel modulator of endothelial insulin signalling. Inhibition of CITED2 is a potential approach to selectively improve IRS2/Akt signalling in endothelial cells and modulate vascular function in diabetes.

Aspirin Use Does Not Improve Survival in Two Independent Population-Based Cohorts of Oesophageal and Gastric Cancer Patients.

Andrew D Spence; John Busby; Brian T Johnston; John A Baron; Carmel M Hughes; Helen G Coleman; Chris R Cardwell

Introduction: Pre-clinical studies have shown aspirin has anti-cancer properties and epidemiological studies suggest it could prolong survival in cancer patients.

Aims: We conducted the first investigation of the association between aspirin and cancer-specific mortality in oesophageal and gastric cancer patients using two large population-based cohorts.

Methods: Cohorts of newly diagnosed gastro-oesophageal cancer patients were identified from English and Scottish cancer registries. Aspirin prescriptions were identified from the UK Clinical Research Practice Datalink (England) and the Prescribing Information System (Scotland), and deaths from national mortality records. Time-dependent Cox regression models were used to calculate hazard ratios (HR) and 95% confidence intervals (CIs) for cancer-specific mortality. Meta-analysis was used to pool results.

Results: The combined English and Scottish cohorts contained 4,654 oesophageal and 3,833 gastric cancer patients. There was no association between post-diagnosis aspirin use and cancer-specific mortality among oesophageal (pooled adjusted HR 0.98, 95% CI 0.89, 1.09) or gastric (pooled adjusted HR 0.96, 95% CI 0.85, 1.08) cancer patients.

Discussion: In these two large UK cohorts, post-diagnosis aspirin usage was not associated with improved survival for patients diagnosed with oesophageal or gastric cancer.

Temporal Bone Dysplasia in Coffin-Siris Syndrome: Case Report Case Study

JEA Wauchope, CG Leonard, K Trimble

We report a child, diagnosed with Coffin Siris Syndrome (CSS), with right otorrhoea. Examination confirmed the presence of cholesteatoma. CT temporal bones was performed to investigate for this and determine relevant surgical anatomy. CT was assessed and measurements were compared with previously published data for normal temporal bone anatomy.

These comparisons demonstrated multiple anomalies in the temporal bone of the child with CSS. Genetic testing confirmed a recognised genetic abnormality (ARID1A anomaly) but with a significantly different phenotype to those previously published with this mutation.

DISCUSSION

CSS is a rare disorder with a number of diagnostic features of facies. The natural history of the condition sees frequent reports of hearing impairment with the ARID1B mutation being most strongly linked to hearing impairment. Despite these associations between CSS and hearing loss, there are no previous reports of temporal bone anomalies with the above genetic mutation.

This case highlights the importance of considering temporal bone abnormalities in all children with CSS or dysmorphia, when they may require mastoid procedures. The risk of a loss of orientation and iatrogenic damage to structures of the temporal bone are increased due to their altered orientation.

POSTER PRESENTATIONS

CLINICAL RESEARCH

Patient Outcomes Following Periprosthetic Femoral Fractures.

Dr Nick Black, ST6, Anaesthetics

Introduction

Periprosthetic fractures are a serious complication of joint arthroplasty. Approximately, 1.7% of total hip replacements and 1.3% of total knee replacements will suffer a periprosthetic fracture within 10 years.

Aims: To characterise the patient population. To ascertain patient outcomes.

Methods: The Fractures Outcomes Research Database collects information regarding all fractures patients admitted to the Royal Victoria Hospital, Belfast and was used to identify patients with periprosthetic femoral fractures from 2007-2015. All patients over 60 years old were included. T-tests and chi-squared tests were used to assess significance.

Results: 261 patients were admitted from 2007-2015, 23 patients were excluded leaving 238 patients. The 30-day and one-year mortality were 2.94% and 13.45% respectively. Those dying within one year were significantly older, $p = 0.004$, than the overall cohort. Only 24.12% ($n = 48$) of the 199 patients admitted from home were initially discharged there.



Discussion: In the 2016 NHFD report our institution reported a crude 30-day mortality of 6.2%. Periprosthetic fractures have a much lower mortality than hip fracture patients. Over 75% of patients admitted from home did not initially return there. This provides insight into the perioperative course which includes challenging anaesthesia, major blood loss and prolonged rehabilitation.

Right Ventricular Strain Imaging with Cardiac Magnetic Resonance Following Lung Resection Introduction

Dr Adam Glass, ST3, Anaesthetics

Previously our research group demonstrated that following lung resection right ventricular ejection fraction (RVEF) decreases with an imbalance between RV contractility and afterload (decreased coupling).

Aim: To determine if changes in RV contractility (strain) can explain the deterioration in RVEF and coupling.

Methods: A post-hoc analysis of our previous study; 20 patients underwent lobectomy and CMR imaging of the heart pre-operatively, two days (POD2) and two months post-op. Longitudinal strain of left (LVLS) and right ventricles (RVLS) were calculated and compared to RVEF, coupling and afterload (wave reflection index (WRI)).

Results: RVLS was reduced from pre-op at two months ($p=0.02$) and was associated with impaired coupling ($r=-0.53$, $p=0.02$). LVLS was unchanged throughout ($p>0.39$). Increased WRI was associated with increased RVLS at POD2 ($r=-0.51$, $p=0.03$) but with decreased RVLS at two months ($r=0.66$, $p<0.01$).

Discussion: This is the first CMR myocardial strain analysis following lung resection and demonstrates isolated right ventricular dysfunction. On POD2 global strain increases (improved contractility) with increased WRI, potentially compensating for acutely increased afterload. By two months this relationship is reversed, potentially indicating RV decompensations secondary to prolonged increased afterload.

Renal Failure Parathyroidectomy – is Preoperative Imaging Beneficial?

Mr Robert Spence, ST6, General Surgery

Introduction: A combination of ultrasound and isotope preoperative localisation imaging is accepted as useful in parathyroid surgery for primary disease. Their role in parathyroid surgery in renal failure patients is uncertain.

Aims: To compare imaging outcomes in two series' of parathyroid surgery – primary and tertiary.

Methods: All data were collected prospectively over a 10-year period (2003–2013). Most patients had both USS and isotope (MIBI) preoperative imaging. Preoperative imaging was correlated with operative findings.

Results: 90 patients (M:F 60:30; mean age 52.8 years) were

included (49 primary, 41 tertiary). In the primary group, 32 underwent USS with 19 (59%) successful identification, 42 underwent MIBI with 27 (64%) correctly identified.

In the tertiary group, 34 patients underwent USS with only 4 (11%) having all glands correctly identified (18 patients (52%) had some glands correctly localised by USS). 35 patients underwent MIBI with only 3 (9%) having all glands correctly identified (14 patients (40%) showed some gland activity).

Comparison using ordinal regression confirms these imaging techniques are significantly more accurate in primary than tertiary parathyroid surgery ($P=0.022$).

Discussion: While combined USS and MIBI imaging are essential in unilateral neck exploration for primary disease – we believe that these imaging techniques have limited place in renal failure parathyroidectomy.

Octaplex use in the Southern Health & Social Care Trust

Dr Ross McMullan, F2, Academic Foundation Programme

Introduction: Haemorrhage is the most serious adverse effect of vitamin K antagonists such as warfarin. It is a leading cause of morbidity and mortality. Rapid reversal of anti-coagulation with prothrombin complex concentrate (PCC) is critical in bleeding patients or those requiring emergency surgery.

Trust Guidelines: Southern Trust Guidelines state that in cases of emergency surgery or major haemorrhage if the INR is >4 then 30units/kg must be used whereas if the INR is <4 then 15 units/kg must be used.

Aims: This project aimed to establish if the correct dose of PCC was being administered. Due to the importance of octaplex in the critical care setting all patients should receive the correct dose.

Methods & Results: Data was collected from Craigavon and Daisy Hill Hospitals over 2 months, during which there were 17 cases of octaplex use. 14 patients required warfarin reversal; 3 required apixaban reversal. Correct dose was administered in 15 cases.

Discussion: This audit demonstrated that the appropriate dose of octaplex is not being used in all cases. Interestingly, this project highlighted the role that PCC can perform in reversing the anti-coagulant effects of oral anti-Xa anticoagulants.

Loop-Mediated Isothermal Amplification Pcr (Lamp) for the Rapid Identification of Invasive Meningococcal Disease In The Emergency Department.

Dr Thomas Waterfield, ST7, Paediatrics

Introduction: Meningococcal disease (MD) is the leading infectious cause of septicaemia and death in children in the UK. The diagnosis of MD is notoriously difficult and current "gold standard" confirmatory tests typically take 48 hours.



Aims: The aim of this study is to assess the performance of a rapid point of care DNA test (LAMP) for the diagnosis of MD against the current gold standard (TaqMan PCR).

Method: The LAMP and TaqMAN PCR assays were compared using *N. meningitidis* genomic DNA spiked over a range of concentrations and including all serotypes (A, B, C, W, X and Y).

Results

- The LAMP-MD analyser is suitable for ED use
- The mean time for detection of Meningococcal DNA was 14.01 minutes.
- Detection of meningococcal serogroups A, B, C, W, X and Z was confirmed
- The LAMP-MD assay was 100% sensitive and specific relative to real-time TaqMAN PCR.

Discussion: LAMP-MD is a practical, rapid point of care test that can reliably detect all Meningococcal serotypes in less than 15 minutes. LAMP-MD has the potential to redefine the standard of care for diagnosing potential MD.

Outcomes of Direct Current Cardioversion in Atrial Fibrillation

Dr Seán Esmonde, ST3, Cardiology

Introduction: Atrial fibrillation can be converted to sinus rhythm (SR) with direct current cardioversion (DCC) to improve symptom control. Success rates have been reported as 75-93%.

Aims: This audit aimed to assess success and complication rates of DCC. Secondary aims included the effect of age or the presence of bi-atrial dilatation.

Methods: We retrospectively collected data from electronic records and medical notes of all patients who underwent DCC over 3 months. Previous echocardiogram results were used to determine left atrial dilatation size. The primary outcome was SR at 6 week review.

Results: 68 patients underwent DCC (mean age 69 years [SD 9.12], range 48-86, 63.2% male), with 27 (39.7%) remaining in SR at 6 weeks. Successful DCC outcome was significantly higher in patients without bi-atrial dilatation compared to those with bi-atrial dilatation (risk ratio 2.6-fold; $p < 0.01$). There were no complications. Age ($p = 0.07$), and sex ($p = 0.40$), did not significantly affect outcome.

Discussion: The success of DCC was lower than reported in the literature. Elderly patients achieved SR with greater frequency, but this was not statistically significant. Bi-atrial dilatation was associated with procedural failure. Guidelines may need changed.

Presentation, Referral and Management of Oropharyngeal Cancer in Northern Ireland - 2013

Dr Conor McKenna, CT2, Core Surgical Training

INTRODUCTION/AIMS: Oropharyngeal cancers include cancers of the tonsil, soft palate and base of tongue. This project audited the presentation and management of these cancers in Northern Ireland in 2013.

METHODS: Cases were identified from the Northern Ireland Cancer Registry using ICD-10 codes pertaining to oropharyngeal cancer. Clinical data were collected in Microsoft Excel and analysed using SPSS.

RESULTS: 77 oropharynx cancers were diagnosed in 2013 (57 males, 20 females). The largest subsite was tonsil ($n=41$). The most common presenting symptom was a neck lump ($n=40$). 50 cases were referred on a red flag pathway and ENT was the most common destination of initial referral ($n=60$). 50 cases had testing for p16 (p16+,33 and p16-,17). 93% of patients had active treatment. 27 patients had surgical management and reconstruction was used in 4 patients. 68 patients had radio/chemoradiotherapy (26 as post-operative RT/42 as primary RT). 35 patients received chemotherapy.

DISCUSSION: This study details the management of oropharynx cancers in Northern Ireland in 2013 and facilitates comparison with other cancer networks. Many patients present with neck disease indicating higher stage disease. Variability existed in testing for p16. Most patients were treated with curative intent with non-surgical treatment being the most frequent treatment modality.

ADRRAD trial initial results – novel combination androgen deprivation therapy (ADT), whole pelvis radiotherapy (WPRT) and radium-223 in metastatic hormone sensitive prostate cancer (MHSPCa).

Dr Philip Turner, ST5, Clinical Oncology

Introduction: MHSPCa has traditionally been managed with ADT until progression. Radium-223 is a bone-seeking radionuclide which extends survival in late castration resistant prostate cancer.

Aims: A phase 1/2 feasibility study to determine toxicity and any signal towards efficacy of the novel combination: ADT, early radium-223 and WPRT.

Methods: Eligible patients had MHSPCa, minimum 3 bone metastases, absence of visceral metastases and PS 0-1. Patients were treated with ADT, 6 cycles of radium-223 at 55kBq/kg and VMAT radiotherapy to pelvis aiming for 74Gy in 37 fractions to prostate and 60Gy in 37 fractions to lymph node bed.

Results: Median follow up is 29 weeks for first 10 patients treated. In total 168 AEs have occurred, 70.2% Grade 1, 25.6% Grade II and 4.2% Grade III. 9 patients had evaluable pairs of Whole Body MRI pre and post radium-223/WPRT. 1 showed progression, 1 showed mixed response, 7 showed partial response. Median time to PSA/ALP progression yet to be reached.



Discussion: A strong signal of tolerability and marked radiological improvement on WBMRI is emerging from this entirely novel combination.

VTE incidence with neoadjuvant chemotherapy: Postop prophylaxis is too little, too late!

Dr Harry Acheson, Locum Doctor

Neoadjuvant chemotherapy is routinely given to OG (oesophageal/gastric) cancer patients with proven survival benefit; local protocol advises VTE prophylaxis post operatively. However no guidelines for prophylaxis in neo-adjuvant period exist, despite higher VTE incidence with neo-adjuvant chemotherapy suggested by studies.

To establish incidence of VTE during neo-adjuvant therapy in OG cancer patients.

A review of patients receiving neoadjuvant chemotherapy for OG cancer 2013-16 performed using electronic clinical records. VTE incidence, date and site were recorded.

196 patients identified (134 oesophagectomy, 62 gastrectomy). With oesophagectomy, incidence of pre-op VTE was 6.0%(8/134) and post-op incidence was 3.7%(5/134) With gastrectomy group incidence of pre-op VTE was 6.5%(4/62) and postop incidence was 1.6% Overall the VTE rate in patients undergoing neo-adjuvant chemotherapy in the pre-op period was 5.6%(11/196) and postop period was 3.1%(6/196) with combined incidence of 8.7%(17/196).

This shows significantly high incidence of VTE in neo-adjuvant period. It may be worthwhile considering prophylaxis on individual basis, given the impact on survival outcome for cancer patients associated with VTE

BASIC SCIENCE/RESEARCH

Trends in body donation at Queen's University 1967-2017.

Dr Lucy Kayes, CT1, Core Medicine

Introduction: Anatomy has been taught in Belfast since the 19th century. Cadaveric dissection is currently used to teach a range of postgraduate and undergraduate students.

Aims: This study aimed to identify key trends within the population of body donors at Queen's University over the past fifty years. It is hoped this will provide an insight into the demographics of donors within Northern Ireland.

Methods: All donors from 1st of January 1967 until 1st of January 2017 were included. Anonymous data was put into an SPSS database and descriptive statistics were generated. Graphs were generated using Microsoft Excel. Subgroup analysis was performed for each ten year period studied and excluding donors from outside Northern Ireland.

Results: There was a slight female predominance. Average age of donors increased throughout the study period. The most common religious group seen was Protestant. Cause of death was varied with the single most common cause of death

being bronchopneumonia.

Discussion: The population of body donors within Northern Ireland is diverse and is representative of the general population in many respects. However, subgroups within the general population were under-represented. These included Roman Catholics and those from peripheral counties, particularly Fermanagh.

STUDIES IN MEDICAL EDUCATION

Implementing Emotional Resilience Workshops: before and after intervention study at Queen's University Belfast.

Dr Claire Potter, CT3, Psychiatry

Introduction: The GMC mandated that emotional resilience training be included in undergraduate medical education. We developed a targeted workshop to meet this need.

Aims: Primary aim was to assess impact on student's scores on the Connor-Davidson Resilience Scale (CD-RISC). Secondary aim assessed if there was any correlation between resilience scores and students' well-being or perceived stress.

Methods: Workshops were delivered to all first year medical students at QUB. Before each session students filled out CD-RISC, Perceived Stress Scale and Warwick-Edinburgh Well-Being scale. Students were re-tested three months later.

Results: 195 students attended the workshops and completed both the before and after questionnaire. 97.4% were 18-24, 57% Females and 68% were Undergraduates. There was a statistical significant decrease from pre to post scores on the CD-RISC only (Cohen's $d = 0.191$, $p < 0.001$). Correlation analysis demonstrated a negative relationship between changes in resilience and changes in perceived stress $r(195) = -0.28$; $p < 0.001$. There was positive relationship between changes in resilience and changes in wellbeing $r(195) = 0.29$; $p < 0.001$.

Discussion: The resilience workshop only had statistical impact on decreasing scores in CD-RISC scale but that this decrease was very small.

Physician-patient language concordance in assessing acute ischaemic stroke

Dr Dylan James MacLochlainn, CT1, Core Medicine

Introduction: Physician-patient language discordance is an independent predictor of a range of poorer outcomes. In acute clinical presentations with time-dependent interventions, it has the potential to delay and complicate treatment.

Aims: With reference to a clinical case, we aim to show how physician language skills can be beneficial in the assessment of acute ischaemic stroke and to highlight the role of language accreditation and relevant training opportunities.

Methods: We reviewed a recent clinical case with reference to relevant publications on physician-patient language concordance.

Results: A 59-year-old monolingual Spanish-speaking woman presented with sudden-onset unilateral weakness. Clinical history and examination were carried out in Spanish by an F2 doctor with appropriate language accreditation under consultant supervision. CT head and angiogram were performed: no acute abnormality was detected. IV thrombolysis was administered. The patient made a full recovery and was discharged. The case was the subject of a reflective practice exercise, as part of which the trainee obtained NIHSS recertification in Spanish.

Conclusions: Trainees with language skills should be encouraged to avail of accredited training where appropriate, as such skills may influence outcome and improve patient experience, particularly in acute scenarios.

Investigating the low pass rate for the Membership of the Royal College of Physicians (MRCP) Part 1 examination in Northern Ireland.

Dr Philip Hall, ST7, Gastroenterology/GIM

Introduction: Core medical trainees who graduated from Queen's University Belfast and were working in the Northern Ireland Deanery had the lowest and second lowest pass rates in the UK respectively for MRCP Part 1 examination in 2014/15. This anomaly was not replicated for other specialties nor in MRCP Part 2.

Aims: To evaluate Northern Ireland specific factors leading to poor performance at MRCP Part 1.

Methods: Two focus groups with core medical trainees (n=13). Data was evaluated using Thematic Analysis. Results were interpreted in the context of recent relevant literature.

Results: The dominant themes highlighted by trainees included issues with their jobs (in particular a focus on service provision and problems with rota gaps), a lack of awareness about how to prepare for examinations and a perceived lack of exam specific support. Other prominent themes included career focus, foundation programme and undergraduate factors.

Finance and impact on social life were weak contributing factors.

Discussion: Low pass rates at MRCP Part 1 are influenced by multiple factors, both institutional and individual. The literature supports a variety of strategies to improve both an individual's chances of success and an institution's educational environment to maximise pass rates.

The human behind the doctor: a qualitative study exploring the emotions of medical trainees and their perception of support during the transition from student to doctor through cognitive interview technique.

Dr Claire Carson, CT2, Core Medicine

Introduction: The transition from student to doctor brings with it new responsibilities, triggering powerful emotions and stress which can result in psychological morbidity. It is therefore a time when support requirements are at their greatest.

Aims: This study aims to reveal the subjective lived experiences and emotions of doctors during this transition; and consequently their perception of support methods and barriers encountered.

Methods: Seven self-selected foundation year one doctors working in Northern Ireland undertook individual cognitive interviews and were asked to elaborate repetitively on a challenging event. Interviews incorporated imaginative variation techniques. Interpretative phenomenological analysis was used to condense qualitative data into meaningful form and offer deeper understanding of trainees' lived emotions and perceptions.

Results: The over-arching theme was the "doctor façade". The most commonly described emotion was guilt. The majority of encounters were negative and focused on dealing with death and dying. Exaggerated emotional response was provoked by the setting, intrinsic factors and human interactions. Barriers to support were predominantly related to a negative perception of interpersonal relationships.

Discussion: Doctors chose primarily discouraging experiences and thus associated emotions and perceptions of support were mainly negative. Additional training and improved awareness of support is likely to be helpful, particularly around the topic of mortality.

QUALITY IMPROVEMENT/PATIENT SAFETY

Improving Doctors' Handwriting

Dr Niamh Melby, ST5, Emergency Medicine

Everyone knows doctors' handwriting is notoriously poor. With increasing scrutiny on documentation, surely something can be done while awaiting electronic record-keeping.

Aims: In the Ulster Hospital, fracture patients are discharged to the 'Virtual Fracture Clinic', which reviews the patient's notes. If medical records are illegible, this results in a delay of the patient journey. It was hypothesised that the use of a fountain pen rather than the basic disposable ballpoint could improve the legibility of doctors' handwriting and therefore eliminates this delay.

Methods: Disposable fountain pens were circulated to Ulster ED doctors over a 6-month period. On 14th February 2017, a 'Fancy Pen Day' was held where there was nearly 100% compliance in use of fountain pens. A sample of documentation from this day was compared to a random sample and adjudicated on a scale of legibility from 1-4. Also, the number of failed referrals to the Virtual Fracture Clinic was reviewed.

Results/Discussion: There was a subjective improvement in legibility using the fountain pen. There was a 50% reduction in failed referrals. Compliance was the main issue, and as such this tool alone may not be the solution to the conundrum of how to improve doctor's handwriting.



Promoting Patient Safety: Implementing and Sustaining Paediatric Protected Handover in District General Hospital

Dr Peter Mallett, Clinical Fellow, Paediatrics

Introduction: There are many potential barriers to effective handover including poor communication, unsuitable environment and lack of senior representation.

During Handover periods, we identified repeated interruptions by non-urgent bleeps as a significant barrier to effective communication, and thus potentially compromising patient safety.

Aim: Reduce the number of non-urgent bleeps received during handover, by implementing a protected paediatric handover scheme.

Methods: A daily log of in-hospital bleeps was recorded during handover. Bleeps were categorised as urgent & non-urgent. Subsequently, we engaged with Maternity & ED colleagues, and promoted respect of new protected handover times, unless an urgent issue arose. We displayed posters, located at strategic areas around the hospital and advertised on Trust computers.

Results: Total number of bleeps received reduced significantly from 28 to 8 bleeps. Non-urgent bleeps decreased from 25 to 6 bleeps. Six months later, we re-audited via the same method. 7 out of total 7 bleeps were non-urgent.

Discussion: The introduction of protected handover has reduced interruptions, leading to safer handovers. The benefits of good handover not only affect the patient, but they also are educationally of better value to the team.

Whilst a significant improvement has been made, challenges lie ahead in the continued promotion of a safe, protected handover culture.

Introducing the word catheter as an alternative to surgical management when treating a Bartholin's Abscess

Dr Michael Graham, ST4, Obstetrics & Gynaecology

Introduction: It was noted that patients presenting with a Bartholin's Abscess waited significant lengths of time for marsupialisation in theatre under general anaesthesia. This placed a significant burden on healthcare resources. Word catheter outpatient management has been shown to be as effective as surgical management.

Aims: To introduce the Word catheter for as an alternative to surgical management when treating a Bartholin's Abscess.

Methods: Prior to introducing the Word catheter the extent of the problem was audited. This revealed significant delays (average time of 43 hours from assessment until discharge) when undergoing surgical management by marsupialisation under general anaesthetic. Following this we introduced the Word catheter.

Results: Significant improvements were found when using the Word catheter with a shorter time from assessment until discharge (usually immediately) and fewer patients requiring surgery and an inpatient stay. There were good outcomes when using the word catheter with every patient reviewed having resolution of their abscess. A marked reduction in patients requiring surgery in theatre resulted in a reduction to patient risk and economic burden

Discussion: A low-cost, relatively simple intervention resulted in improved patient care, patient safety and reduced healthcare costs.

Translating statistical improvement to service improvement – are we measuring the right metric?

Dr Kevin McGarry, CT2, Core Surgery

Introduction: In December 2017 dedicated wound management teaching was incorporated into the Belfast Trust Emergency Medicine Induction. Despite producing statistically significant improvements in participants' objective and subjective ability, no improvement was demonstrated in minor injury waiting time. We discuss the complex issue of measuring improvement in dynamic systems and how to improve data capture in such environments.

Aims: Assessing the impact of induction teaching on the objective and subjective abilities of junior doctors' management of minor injuries. Assessment of impact on departmental minor injury waiting times.

Methods: A validated OSAT scale and novel Likert scale was used before and after the teaching intervention to assess objective and subjective changes in suturing ability respectively. Impact on service provision was assessed by analysis of 7 days of minor injury waiting times before and after the intervention.

Results: Highly statistically significant improvement was demonstrated in individual objective and subjective abilities ($P > 0.005$). However, no statistical improvement occurred in waiting times.

Discussion: Despite improvement in individual ability there was no systems improvement in the selected outcome. Future projects may benefit from looking at long-term follow up of multiple sources of data capture.

Exploring patient perceptions of alternative outpatient review methods

Mr Joshua Clements, ST3, General Surgery

Introduction: The delivery of a safe and efficient outpatient (OP) service is complex. In an era of increasing waiting times and growing financial pressures, traditional face to face OP review models are becoming difficult to sustain. Virtual clinics, telephone and video consults have been trialled with varying success. A sustainable patient centred alternative is required.

Aims: To identify patients knowledge and preference of alternative outpatient review methods.

Methods: A 6 question questionnaire was designed and distributed to consecutive patients attending a consultant led general urology outpatient clinic across 4 hospital sites during February 2017.

Results: 102 questionnaires were completed. 77 male and 25 female with a median age of 66 and 59 respectively. 93% attended by car with or without a relative. 70% of patients lived <10 miles from the hospital. 15% patients had heard of telephone review and 3% email review. 75% of patients had a mobile telephone and internet access. 45% of patients preferred outpatient review over other methods.

Discussion: There is a lack of knowledge of alternative review methods. The OP clinic is accessible to the majority and is the preferred method of review. Other means of review may be difficult to instigate in this older cohort despite good access to information technology.

Ensuring capture of patients with Cystic Fibrosis Related Diabetes (CFRD); The CFRD Database

Dr Suzanne Ringrow, ST5, Respiratory Medicine & Dr Pawel Boguaz, ST6, Endocrinology

CFRD is a common complication of cystic fibrosis in a population that is now surviving well into adulthood. It is crucial that these patients receive input from specialist diabetic services as poor glycaemic control leads to higher pulmonary exacerbation rates and decline in lung function. This project aimed to assess the capture and follow up of CFRD in Northern Ireland.

Using the joint care CFRD clinic list and input from specialist CF nurses we compiled a list of known CFRD patients. To capture patients not referred to specialist diabetic services we compared this to HbA1c and oral glucose tolerance results consistent with CFRD from Belfast Link Labs and the Northern Ireland Electronic Care Record.

304 patients with CF are registered in Northern Ireland. 32 patients were diagnosed with CFRD; our search revealed a further 5 with undiagnosed CFRD and 15 with impaired glucose tolerance.

Maintaining follow-up and capture of patients with CFRD presents many challenges. To promote ease of communication and multidisciplinary team working we developed a CFRD database to record all CF patients with impaired glucose tolerance and CFRD. This will be maintained by the specialist dietician for the CF team and reviewed at quarterly MDMs.

Improving safety, outcomes and service delivery in special care dentistry (SCD) using high flow nasal oxygen (HFNO).

Ms Kathryn McKenna, StR, Special Care Dentistry

Introduction: HFNO is a system that delivers heated and

humidified oxygen at high flow rates up to 60 l/min, increasing positive pressure in the upper airways, reducing respiratory resistance and assisting ventilation while maintaining patient comfort. It may have particular benefits in SCD in patients for whom airway management is challenging, including obese patients, elderly patients, and those with co-morbidities, particularly where sedation is used. In SCD treatment may be carried out in a day procedure unit (DPU) or as an in-patient. DPU is preferable to ease pressures on in-patient services and improve cost-effectiveness.

Aims: To investigate the potential benefits of HFNO in SCD.

Methods: A literature review was conducted. Case examples and TMS data were reviewed.

Results: HFNO is superior in maintaining oxygen saturations than conventional oxygen delivery systems, resulting in less interruption to treatment, reduced recovery times, improved safety and outcomes for patients, and has decreased the need for in-patient treatment.

Discussion: In SCD, HFNO improves patient safety and outcomes, improves service delivery for patients and service providers, reduces barriers to care for patients and improves cost-effectiveness for Trusts.

Pilot study analysing emergency management of patients referred to Regional Plastics Trauma Clinic

Dr Clare Hutchinson, CT2, Core Surgery

Introduction: Patients attending the regional plastics trauma clinic in Dundonald are referred from hospitals and GP practices all over Northern Ireland. There is currently no regional guidance available for wound dressing on patients referred to their service and patients arriving for review had inconsistent primary wound care.

Aim: To take a snap shot looking at current practises of trauma wound care on a regional level. This data is intended to be evaluated and online guidance material produced for any healthcare professional involved in primary dressing of wounds referred to the plastic trauma clinic.

Method: For 50 patients attending clinic we recorded parameters from their initial management including reason for attendance, type of dressing, if X-ray was performed, whether tetanus was given (if needed), if the wound was washed and sutured and if antibiotics were given.

Results: Referrals came from Belfast and peripheral hospitals in almost even numbers. 17 wounds were dressed inappropriately, on one occasion requiring a general anaesthetic to remove. 1 patient did not receive tetanus, 6 wounds did not have essential imaging and 7 were not closed.

Discussion: There is too much variation in initial management, guidance could improve wound care.

'Transitions of Young People who turn 18 whilst Inpatient in NI Regional Child and Adolescent Mental



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Health (CAMHs) Unit*

Dr Bronagh McCarragher, CT1, Psychiatry

Introduction: Transition can be a difficult time for young people.

There is currently no policy guiding inpatient transition from CAMHs to Adult Mental Health services for acute transition.

Aims: Ascertain how many inpatients turned 18 over the previous three years, their diagnosis and outcomes of transition.

Methods: Retrospective study analysing weekly ward lists, paper and electronic case notes between August 2014- August 2017; as well as patient interview about their experience.

Transition process was audited against transition standards- TRACK study 2008.

Result: Eleven inpatients turned 18 over the period.

Average length of stay post 18 was 24 days, longest- 64 days. 45% had psychosis.

73% had multiple psychiatric comorbidities. All required transfer to Acute Care

-82% to inpatient

-18% to Home Treatment Team

TRACK standards:

-100% had transition planning and information transfer

-Only 45% had joint working

Discussion: The majority of young people did not meet all transition standards. Patient experience suggested need for joint working and a planned transition.

The results of this audit will be used to draw up transition guidelines with adult colleagues.

Postoperative prophylactic clexane adherence in Oesophagectomy and Gastrectomy patients in Northern Ireland: A Novel Patient Education Programme

Dr Harry Acheson, Locum Doctor

Oesophagectomy/gastrectomy patients receive 28 days VTE prophylaxis post operatively. This improves morbidity and outcomes. This is usually completed in community. In this context patient education/compliance regarding administration is vital.

To audit prophylaxis prescription rates and patient compliance post discharge.

Discharge prescriptions of 25 patients over 6 months were audited. Then a follow up telephone survey checking education/compliance.

Interventions were then performed

Patient education leaflets + education session

Incorporation of VTE education into discharge goals by engaging with nursing staff. A second cohort of 25 was then reviewed post intervention similarly.

Of the 25 patients identified pre-intervention, 5 unable to be contacted. 100% of patients discharged on prophylactic clexane.

Follow up telephone survey - 95% compliance

15% didn't understand VTE prophylaxis necessity

Of the 25 patients identified post intervention, 10 were unable to be contacted. Post intervention follow up patients

100% compliance

5% didn't understand VTE prophylaxis necessity

Initially 100% of patients discharged on prophylaxis but this was not reflected in compliance, with survey suggesting lack of understanding.

Following intervention compliance increased to 100% and patient comprehension improved.

It seems that improved patients and staff education can improve compliance rates with VTE prophylaxis.

CASE REPORTS/SERIES

Pyroglutamic acidosis: a rare stroke mimic

Dr Dylan James MacLochlainn, CT1, Core Medicine

Case Study: A 67-year-old woman presented with severe dysphasia, ataxia, and right-sided facial droop outside the thrombolysis window. Her past medical history included chronic kidney disease, hypertension, and type 2 diabetes mellitus. Regular medication included co-codamol. No acute abnormality was detected on initial brain imaging; an old left lentiform nucleus infarct was noted. The patient was diagnosed with E. coli urosepsis, acute kidney injury, and a high anion-gap metabolic acidosis. Antibiotics and intravenous fluids were commenced; nephrotoxics were held. Laboratory lactate and ketone levels were normal, but three separate urine organic acid profiles showed increased levels of pyroglutamic acid. Paracetamol and antibiotics were discontinued and the acidosis resolved on sodium bicarbonate. The patient's neurological features had completely resolved by discharge.

Discussion: Pyroglutamic acidosis is a rare stroke mimic; neurological features in this case may also be attributable to decompensation of old stroke related to sepsis, or drugs. This patient had several known risk factors for pyroglutamic acidosis: female sex, renal impairment, paracetamol, sepsis, and antibiotics. Withdrawal of causative agents is the mainstay of treatment, although sodium bicarbonate and N-acetylcysteine are sometimes used. Early diagnosis is important as results may take several days.

Ureteric Injury in Obstetrics and Gynaecology Surgery: Case Report

Dr Aarti Manohar Shetty, LAT1, Obstetrics & Gynaecology

Case Study: A 56y old postmenopausal woman underwent total abdominal hysterectomy and bilateral salpingo-oophorectomy for a uterine fibroid measuring around 11.4x10.1x9.6cm in Ultrasound scan. 3 weeks later, she presented with discharge from drain site and raised CRP. On suspicion of intra-abdominal collection, she underwent ultrasound abdomen, which showed a 7x2.3x3cm hematoma. A repeat scan, demonstrated persistent hematoma with moderate hydronephrosis. An urgent CT urogram reported moderate hydronephrosis and hydroureter secondary to extrinsic compression of distal ureter close to VUJ. An attempt for right ureteric stenting was limited due to tortuous nature of ureter, and hence, she underwent right nephrostomy. Antegrade follow up studies demonstrated free drainage of contrast down the ureter, followed by removal of nephrostomy and full recovery.

Discussion: The incidence of ureteric injury ranges from 0.2-1%, of these nearly 50% are attributed to be a complications from obstetric and gynaecology surgeries. This case report describes a unique presentation of Grade I ureteric injury and the challenges involved in diagnosis and management. The mechanism of hydronephrosis and hydroureter in this case is hypothesized due to chronic stretch of ureter caused by uterine fibroid, followed by post-operative recoil and twist causing pseudo obstruction, thereby making retrograde stenting difficult.

Blurred vision: an unusual presentation of pulmonary adenocarcinoma

Dr Stephen McAleer, CT2, Core Medicine

Case study: 60-year-old lady presented with blurred vision over several months. Retinal examination at eye casualty revealed right choroidal lesions, suspicious of metastatic disease. Subsequent CT scan of chest, abdomen and pelvis revealed a 4 cm soft tissue mass in the right upper lobe. There were also abnormal neck nodes at the left base of neck, measuring up to 14 mm in size.

The patient is an ex-smoker with a 45-pack year history and had a history of STEMI 4 months prior, hypertension and rheumatoid arthritis. There is no personal or family history for cancer. The patient had noticed an unspecified amount of weight loss during the past year. She denied any cough, recognised her energy levels were reduced but remained active and independent.

Ultrasound guided FNA of neck node was performed and cytology was consistent with metastatic pulmonary adenocarcinoma.

Discussion: Metastatic tumours are the most common intraocular malignancies, usually located in the choroid. Lung cancer has been demonstrated to metastasise to the eye,

although rarely is this the first manifestation of the disease. Intraocular metastases are a significant clinical problem to consider.

Looking in vein; an unusual case of superior vena cava syndrome.

Dr Emma Keelan, ST4, Respiratory Medicine

Introduction: A 69 year old gentleman presented with a 3 month history of facial and upper limb swelling. Past medical history included tachy-brady syndrome requiring pacemaker insertion 6 months prior. Regular medications included Apixaban. Examination noted dilated neck and chest veins. Pemberton's sign was positive. Chest radiograph and CT chest were normal. An echocardiogram demonstrated no abnormalities. Urinalysis was negative for protein and renal function normal.

Autoimmune and myeloma screens were negative. A CT abdomen was completed, suggestive of amyloid yet rectal fat biopsies were negative.

The patient was commenced on dexamethasone and his Apixaban stopped after concern regarding oedema as rare side effect. The patient noted no symptomatic improvement. Subsequently a venogram demonstrated SVC obstruction secondary to clot formation around the patient's pacemaker wires.

Discussion: Superior vena cava (SVC) syndrome is a rare but serious complication following pacemaker implantation. Deposition of fibrin on pacemaker leads can result in vessel wall inflammation, fibrosis and thrombus formation. Most patients remain asymptomatic due to the formation of collateral vessels, however in those with venous occlusion facial and upper extremity swelling, exertional dyspnea, headache and visual changes are reported. Treatment options include percutaneous transluminal angioplasty, implantation of metallic stents, thrombolysis, mechanical thrombectomy, and venous grafting.

Small bowel obstruction secondary to Intra gastric Balloon Migration: A case report.

Dr Wael Fadel, CT1, Core Surgery

Abstract: Due to the increasing prevalence of obesity in western society, we have encountered newly innovative methods and modalities used for treatment of obesity; unfortunately this also means increasing number of complications associated facing physicians.

The need for physicians to educate themselves and familiarize with these side effects and complications of each option and the presenting complaints and symptoms associated with each as well as differential diagnosis that should be easily missed.

Case Report: We report on a 27 year old female which presented with small bowel obstruction secondary to migration of an intragastric balloon. She presented to emergency department with crampy abdominal pain and post



prandial vomiting for three days. The patient had undergone an Intra-gastric balloon insertion 7-8 months prior to her presentation.

After confirming diagnoses with investigations sure as abdominal X-rays, computed tomography (CT) scan; Mechanical small bowel obstruction secondary to impacted foreign body within the mid ileum and conservative management was felt appropriate for 48 hours. The patient later underwent a laparotomy and balloon extraction.

Discussion: Most medical literature and recommended guidelines from producing manufacturer's advise strict adherence to removal of intagastric balloon after 6 months to prevent complication such as acute pancreatitis due to over inflation, gastric perforation and balloon spontaneous deflate which leads to migration.

Furlow Palatoplasty versus Intravelar Veloplasty: Multicentre retrospective review of 5 year speech outcomes for submucous clefts and clefts of the soft palate.

Mr Tomas O'Neill, ST8, Plastic Surgery

Aims and Objectives: Our aim was to analyse the 5-year speech outcome data in patients who had undergone either Furlow Palatoplasty or Intravelar veloplasty (IVV), between 2004 and 2010 for sub-mucous (category S) and soft palate clefts (category D). We wanted to compare the outcomes for the two techniques in order to assess if one technique achieved better results or not, and if any difference was statistically significant.

Material and Methods: A retrospective review of the 5-year CAPS-A speech outcomes was collated when inclusion and exclusion criteria were applied. Syndromic and non-syndromic children were included. Data was included from four specialist cleft units across the UK. The speech outcomes were consensus listened as per normal departmental protocol.

Results: Excellent speech outcomes were achieved in the Furlow Palatoplasty group for both syndromic and non-syndromic children.

Discussion and Summary: Furlow palatoplasty is a safe and reliable method to repair sub-mucous clefts and clefts of the soft palate. It produces excellent speech outcomes and has been shown to be superior to IVV in the literature for these cleft types.

The management of benign and malignant strictures with Colonic Stenting.

Dr Sinead McNally, CT2, Core Surgery

Introduction: Colonic stenting is a recognised treatment of acute and subacute obstruction in benign and malignant strictures. We assessed the efficacy within our Health Trust.

Methods: A retrospective review of all colonic stents inserted between May 2005 - January 2017 in the Southern Trust N.I. was performed. The indication, technical success, and complications were analysed.

Results: 59 patients underwent 62 colonic stents. Nine were emergency procedures and 53 elective. The number of stents inserted for colorectal cancer was 54(87%), seven (11%) had benign strictures, and one(2%) had an invading ovarian tumour.

Stenting was indicated for palliation in 50 (81%) patients, and five (8%) patients had stenting as a bridge to surgery. The technical success rate was 96.6%. Complications included two (3.4%) perforations, six (10.3%) stent migrations, and three (5%) developed tumour overgrowth. 49 (79%) stents were successful and didn't require further intervention. 13 (21%) required further procedures either stenting or surgery, and two(3%) of these were performed as an emergency. There was no stent associated mortality.

Discussion: Within our department, colonic stenting has been shown to be an effective and safe procedure, reducing the number of patients requiring surgical intervention and providing successful palliation of colonic obstruction.

Bilateral Thigh Pain

Dr Keith McPartland, CT2, Core Medicine

Case: A 28-year-old lady was referred with bilateral thigh pain, difficulty walking, and dark urine 48 hours after participating in her first spinning class. Examination showed bilateral reduced knee flexion and extension, tense, tender thigh muscles, with intact pulses and sensation. Her renal function was normal, with a serum creatine kinase (CK) concentration of 609 700 U/L. She received aggressive rehydration, was referred urgently to the surgical team, and underwent emergency bilateral thigh fasciotomy

Discussion: Exercise-induced rhabdomyolysis has been linked to spinning, and the risk has been reportedly related to adequacy of physical conditioning of subjects and the duration and intensity of exercise (1). There is wide variation in patient presentation, but the majority have pain and reduced power and movement post-exercise. There is a recognised "first class" phenomenon, where the risk of rhabdomyolysis is higher in new spinning attendees (2).

Reliance on the presence of neurovascular compromise as a diagnostic criterion for CS can be misleading (4), as in this case, where the affected muscle groups had no major neurovascular component.

Conclusion: With the growing popularity of spinning, acute physicians need to be aware of this condition to avoid catastrophic complications.