

Abstracts

Annual Trainee Doctors' Prize Evening, Thursday 5th November 2015.

Centre for Experimental Medicine,
Queens University Belfast.



ORAL PRESENTATIONS

Investigating Dermal Scaffold-Stem Cell Constructs in Wound Healing

Sandra E McAllister, James Bojdo, Christina O'Neill, Jasenka Guduric-Fuchs, Reinhold Medina, Alan W Stitt

Introduction: Chronic wounds affect around 200 000 people in the UK, costing around £3 billion annually. Wound healing problems are associated with hypoxia of the wound microenvironment. Promoting angiogenesis with autologous cell-based treatments requires both the correct cell and the optimal application method.

Aims: This study has been designed to investigate the use of commercially-available dermal scaffolds in delivering stem cell therapy to wounds.

Methods: Endothelial colony forming cells (ECFCs) were isolated from adult human peripheral blood, and cultured on one of three scaffolds in vitro (Matriderm®, Glyaderm®, Optimaix). The capacity of the cells to form three-dimensional microtubular constructs in scaffolds was determined. Scaffold-cell constructs were implanted into full thickness wounds on the dorsum of athymic nude mice. Wound blood flow was measured using laser Doppler imaging. Wound size was calculated from serial photographs.

Results: ECFCs formed more numerous and more stable microtubular constructs in Matriderm® than in other scaffolds. Preliminary results show that wounds with implanted ECFC-Matriderm® constructs had significantly higher blood flow both 2 and 4 days after wounding than wounds treated with Matriderm® alone.

Discussion: Wound healing problems cause substantial morbidity and considerable costs. Characterising cell delivery methods is essential to translate research into clinical use

The role of cyclooxygenase 2 expression in stage II and stage III colon cancer survival

RT Gray, MM Cantwell, HG Coleman, MB Loughrey, P Bankhead, S McQuaid, RF O'Neill, K Arthur, CR Cardwell, BT Johnston, J James, P Hamilton, M Salto-Tellez, LJ Murray

Introduction: The association between overexpression of cyclooxygenase 2 (COX-2) and survival in colorectal cancer remains incompletely investigated.

Aims: To investigate the role of COX-2 expression and survival in a population-based cohort of patients with stage II and III colon cancer.

Methods: Immunohistochemical expression of COX-2 (positive versus negative) was assessed in 663 stage II and III colon cancer patients. Five-year follow-up data were obtained through the Northern Ireland Cancer Registry. Cox proportional hazards models were used to calculate hazard ratios (HR) and 95% confidence intervals (CI) for colon cancer-specific survival (CSS).

Results: Medication history was available for n=607 (91.6%) patients and aspirin use within this subgroup was n=130 (21.4%). COX-2 positive cancers (p=0.01) were slightly older but stage distribution and aspirin use were similar between the COX-2 groups. COX-2 expression and aspirin use were not associated with improved CSS after adjusting for age, gender and stage. CSS was improved amongst aspirin users with COX-2 positive tumours (HR 0.52, CI 0.29-0.99) but this finding was no longer statistically significant when adjuvant chemotherapy and co-morbidities were considered (HR 0.67, CI 0.28-1.63).

Discussion: COX-2 expression does not appear to have prognostic or predictive potential within this population-based cohort of colon cancer.

Cognitive Rehabilitation in MS. Evidence for Neuroplasticity. A fMRI study.

Jamie Campbell, Dawn Langdon, Waqar Rashid, Mara Cercignani

Introduction: Cognitive impairment is known to affect between 40-60% of individuals with multiple sclerosis (MS). The effectiveness of cognitive rehabilitation in MS is uncertain.

Aims: To explore the feasibility and efficacy of computerised, home-based cognitive rehabilitation in patients with MS using advanced structural and functional MRI techniques.

Methods: 38 patients with MS and evidence of cognitive impairment on the Brief International Cognitive Assessment for Multiple Sclerosis (BICAMS) were enrolled in the study. Patients were randomly assigned to undergo 45-minutes of computerised cognitive rehabilitation (n= 19) three times weekly for six weeks or to a control condition (n = 19). All patients underwent MRI at baseline (time 1) and post-intervention (time 2). Changes in cortical activations were explored using a visual n-back fMRI paradigm.

Results: The n-back task was associated with robust cortical activations in known working memory networks. At time 2 the treatment group exhibited a significantly increased activation in the bilateral prefrontal cortex and right temporo-parietal regions relative to control group at time 2 (p<0.05 FWEcorr).



Discussion: This study supports the hypothesis that computerised cognitive rehabilitation may be an effective approach to improving cognitive performance in patients with MS. The alterations in cortical activation are likely to represent more efficient neural processing.

Surgical operation note quality

Serena Martin, Scott McCain, Ian McAllister, Stephen Kirk

Introduction: Royal College of Surgeons (RCS) Good Surgical Practice guidelines provide eighteen key parameters which should be documented on a surgical operation note to allow for quality patient care and effective handover. Poor documentation of these parameters and poor legibility of note keeping both have the potential to impact on patient safety.

Aims: To audit the quality of 50 surgical operation notes for General Surgery and Urology in the Ulster Hospital Dundonald.

Methods: Operation note quality for 50 consecutive patients was audited. Operation notes were assessed in comparison with the RCS criteria. Legibility was assessed by both a doctor and a lay person using the Adjusted Note Keeping and Legibility Score.

Results: No patient had all parameters recorded. Time of operation and CEPOD status was not recorded for any patient. Only seven (39%) parameters were met for all patients. Seven (14%) operation notes were classed "illegible" by a lay person.

Discussion: Current operation notes do not comply with RCS guidelines. An electronic operation note, potentially accessible through NIECR would facilitate direct patient care by automatically recording many parameters and provide legible, easily accessible operation notes.

As easy as ABC - a discharge checklist for oesophagogastric surgical patients

A McIlroy, R Robinson, P Black

Introduction: Working on a busy ward for oesophagogastric surgery involves a large multidisciplinary approach to discharge. Many aspects need to be covered such as dietary care, wound care, analgesia and medication. The aim of our audit was to improve adherence to the following national guidelines: NICE recommend 28 days post op enoxaparin for major abdominal surgery, and British guidelines for haematology recommend 3 monthly hydroxocobalamin post gastrectomy but not oesophagectomy.

Aims: The initial audit was a review of 34 discharge letters between January and June 2015 which showed a large variation in discharge prescriptions, particularly at weekends.

Methods: A checklist with an ABC style approach to include MDT aspects of discharge was implemented. A reaudit for 16 patients between July and October was completed.

Results: Following checklist implementation, hydroxocobalamin and enoxaparin prescription increased from 68% to 82%. 7% of oesophagectomy patients inappropriately received hydroxocobalamin on discharge which reduced to 0% on reaudit. There was no change in the prescription of enoxaparin in oesophagectomy patients.

Discussion: Since the introduction of the checklist, adherence with national guidelines has improved. We plan further ward staff education and reaudit.

POSTER PRESENTATIONS

CLINICAL RESEARCH

Patient outcomes after urgent laparotomy – A retrospective cohort study in a district general hospital

Christopher Brown

Introduction: Non-elective laparotomy is commonly performed in the UK. Unfortunately, there is limited evidence on patient outcomes. Evidence is lacking on the impact of timing of laparotomy and the use of pre-operative computerised tomography (CT) scanning on outcomes.

Aims: To investigate the impact of pre-operative CT scan, time and day of laparotomy on mortality rate and length of hospital stay (LOS) following urgent laparotomy.

Methods: Data was collected retrospectively for consecutive adult patients who underwent a midline laparotomy within 24 hours of admission to Causeway Hospital between 1st January 2012 – 31st December 2013. Statistical analysis was performed.

Results: 78 patients were included. 11 patients died in-hospital (14.1%) and 18 patients died within 12-months of laparotomy (23.1%). The timing of laparotomy, along with pre-operative CT scanning, did not demonstrate any statistically significant impact on survival or LOS.

Discussion: Urgent laparotomy has a significant in-hospital mortality rate. Analysis demonstrated no statistically significant difference in mortality or LOS when analysed against timing of laparotomy and performance of pre-operative CT scan. Findings may apply to similar sized hospitals within the UK.

Diagnostic rates in thyroid lobectomy

David Dick

Introduction: British Society of Thyroid guidelines on thyroid cancer continue to recommend using the Thy1-5 classification for the reporting of fine needle aspirates taken from suspicious thyroid lesions. Of interest to us is the somewhat grey area of Thy3, which includes 3a (indeterminate, suspicious) and 3f (possible follicular). How good is our diagnostic cytology service in helping us decide whom to operate on?

Aims: To find our local diagnostic rate for samples reported as Thy3 on cytology, after proceeding to hemithyroidectomy.

Methods: We reviewed pre and post op pathology results over a period of one calendar year, and then compiled the data to find our diagnostic rates.

Results: 247 needle or core biopsies, strong female preponderance, mean age of 53. 31 cases of Thy 3a, 13% diagnostic. 37 cases of Thy 3f, 22% diagnostic rate.

Discussion: This data compares well with internationally published data regarding the acceptable variation in thy3 diagnosis and outcomes. It has allowed us to better inform our patients and improved pre-operative counselling. It has also formed a base for further audit into the U classification mandated for radiological ultrasound reporting.

CASE REPORTS/SERIES



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Transanal Endoscopic Microsurgery – Changing the Management of Early Rectal Cancer

Robert Spence

Introduction: While the management of rectal cancer has become increasingly multimodal, surgical excision in the form of anterior resection or abdomino-perineal resection remains the mainstay of treatment. Transanal endoscopic microsurgery (TEM) increases the options available to the colorectal surgeon for early rectal cancer and endoscopically unresectable polyps, which can be used as an alternative to radical abdominal surgery, or challenging transanal excision.

Aims: To evaluate the outcome of all TEM procedures performed in a district general hospital over the past 4 years.

Methods: Data were obtained from reviewing patient notes, operation records, and PACS Radiology system.

Results: 21 patients (Male 11: Female 10) with a mean age of 67.9 years underwent TEM. Initial biopsy results: 17 patients with low-grade tubulovillous adenoma (TVA), 1 patient with high-grade TVA, and 3 with adenocarcinoma. All 21 procedures were completed as TEM, with a mean inpatient stay of 2.1 days. Post-operative pathology showed clear margins in 18 patients. Only 2 patients suffered complications - secondary haemorrhage; perforated rectum, repaired laparoscopically. At mean follow-up of 26 months, there have been two recurrences, with one mortality secondary to comorbidities.

Discussion: TEM is a proven alternative to radical abdominal surgery with comparable results with traditional abdominal surgery.

Buschke-Löwenstein tumour - an alternative management approach.

Aidan Bannon

Case Study: We describe the case of a 47 year-old male who presented with bleeding and discharge from a long-standing large, malodorous warty lesion in his natal cleft. Histopathology confirmed Giant Condylomata Accuminatum (GCA) with mild-to-moderate dysplasia and widespread koilocytosis. He was later readmitted for wide local excision of the lesion which was 105x85x25mm in size. His wound was successfully managed with Topical Negative Pressure Wound Therapy (TNPWT) and he was discharged day 3 postoperatively.

Discussion: GCA, also referred to as a Buschke-Löwenstein tumour is a locally aggressive verrucous growth of the ano-genital mucosa. Incidence is less than 0.1% and tumour pathogenesis is strongly associated with HPV-infection. Due to significant risks of recurrence and malignant transformation surgical excision is recommended. Options include wide local excision with mesh skin-grafts or flaps and abdominoperineal resection is reserved for those with pelvic involvement. Due to complications such as poor wound healing from faecal contamination, abscess and perianal fistulae formation, a temporary loop colostomy is a more common surgical approach. This is the first reported case to use TNPWT post excision, which allowed for reduced inpatient stay, quicker recovery and less impact on patient quality of life.

Outcomes Following Appendicectomy: A single centre cohort review

Brendan Skelly

Introduction: Identification of variation in practice is a key step towards standardisation and determination of reliable quality markers. Following similar national studies, this study aimed to investigate the outcomes following emergency appendicectomy, paying attention to key rates of morbidity.

Aims & Methods: Single centre trainee led retrospective cohort study performed (2014). Primary outcome of interest was the normal pathology rate. Secondary outcomes were laparoscopy and 30-day adverse events.

Results: N=195. Age range (yrs): 32% (<16), 61% (16-50), 7% (>50). 54% M:F 46% ASA I-II: 96% ASA III-IV: 3%; Pre-Op Imaging: 49% None/AXR, 11% USS, 18% CT, 23% Missing; Operative Type: 78% Open, 19% Laparoscopic, 3% Lap-to-Open; Operating Surgeon Grade: 6% Consultant, 93% StR/Middle Grade, 1% SHO; Duration of Surgery: 55% <60mins, 45% >60mins; Histology: 16% Normal, 57% Simple Appendicitis, 20% Complicated Appendicitis, 7% Malignancy/Other; 30 Day Adverse Events: 0% Requiring Surgery/Radiology Intervention, 4% Wound Infection, 2% Pelvic Abscess, 11% Post-Op Imaging, 0.5% Composite

Conclusions: National studies reveal a wide variation of practice and outcomes when performing appendicectomy for acute appendicitis. Our data suggests much better than average overall outcomes compared with landmark recent national studies. 'Normal' appendicectomy rate is acceptably low (16%), allied to 30-day adverse event rates. Deterioration of surgical training is a concern however, with only 1% of cases being performed by the SHO grade and 19% laparoscopic surgery rate, suggesting a lack of trainee confidence when performing laparoscopy unsupervised.

Managing Acute Diverticulitis: A single centre ten year review

Brendan Skelly

Introduction: Acute Diverticulitis is one of the most common entities which presents to the general surgeon. Flexible Endoscopy, CT Colonography and Barium Enema are the common diagnostic modalities.

Aims: 1. Evaluate change in the age or BMI of those presenting with acute diverticulitis in the last decade; 2. Establish if there has been a change in diagnosis and management; 3. Assess waiting times for definitive colonic assessment

Methods: Single centre retrospective cohort study: patients hospitalised with acute diverticulitis in years 2004 (n=24) and 2014 (n=30).

Results: Mean age 58.1 (2004) versus 52.7 (2014) (p=0.22). Mean BMI 31.5 (2004) versus 31.9 (2014)

(p=0.87); Diagnostic CT 29.4% (2004), 90% (2014); 2004: 23.5% had surgery, 50% pre-operative CT; 2014: 16.7% had surgery, 90% pre-operative CT; 2014: Significantly increased interval between discharge and definitive colonic assessment

Average wait for barium enema 42.4 days (2004) versus 80 days for endoscopy/CT Colonoscopy (2014) (p=0.05)

Conclusions: No significant change in demographics or BMI. Increased utilisation of diagnostic CT with subsequent reduction in surgery. Generational paradigm shift with modality of colonic assessment. By 2014 patients waiting significantly longer for assessment, majority >6 weeks for definitive diagnosis



QUALITY IMPROVEMENT

Management of Acute Gallstone Pancreatitis - A Multi-Centre Study

Robert Spence

Introduction: British Society of Gastroenterology (BSG) set standards for the management of acute gallstone pancreatitis; in particular, time until definitive treatment (2-weeks from index admission).

Aims: To evaluate the management of acute pancreatitis against BSG guidelines, focusing on delays to definitive management, in 3 district general hospitals.

Methods: Data were obtained retrospectively for consecutive patients over 1-year period in each hospital between 2012-2015, and evaluated against BSG guidelines.

Results: 113 patients in total were admitted with gallstone pancreatitis (mean age 56 years). Mortality was 4.9%; mean length of stay - 7.9 days. Mean wait for ultrasound: 1.4 days; MRCP as inpatient: 3.3 days, as outpatient: 22.5 days. Intervention included ERCP (mean inpatient wait: 4.1 days, as outpatient: 47.7 days) and cholecystectomy (60 patients, mean wait 77.3 days). There were 13 re-admissions of patients awaiting cholecystectomy. Compliance with BSG guidelines were 8%, 24%, and 75% respectively within the three centres.

Discussion: Delay for definitive management was partly attributable to imaging, especially as outpatient. Patients should be investigated as an inpatient to ensure guideline compliance with the 2-week rule. There was variability between the centres, concluding that these patients should have surgery during their index admission.

Eye and Hand Fatigue in Minimal Invasive Surgery; 2D VS. 3D: Randomised Control Trial.

Adham Youssef

Aims: The available data reports the efficacy of the three-dimensional (3D) vision system and its superiority over two-dimensional (2D). However the physiological effects of 3D on surgeons remain unaddressed. To address such gap in literature; we aimed to objectively investigate the effects of 3D on ocular and hand muscles fatigue in comparison to 2D and its impact on surgical performance in novices.

Methods: We conducted a stratified randomised comparative study with cross-over of 26 novices. Eye fatigue was assessed using Visual Stress Test (VST), Visual Acuity (VA) and post-study display questionnaire. Hand fatigue was assessed using grip dynamometer. Surgical performance was evaluated using a validated curriculum with proficiency criteria Fundamentals of Laparoscopic Surgery curriculum (FLS).

Results: The VST showed a higher mean score in the 3D group of 3.92 in comparison to the 2D group with mean of 3.15, (P-value = 0.23). It is apparent from VA test that the 3D group had a better VA on both eyes compared to the 2D group after performing the suturing task (right eye; P-value=0.29, left eye P-value=0.47). There was no statistical difference in handgrip strength between both display groups (right hand; P-value=0.55, left hand P-value=0.70). The 3D group demonstrated statistically evident superior performance in terms of less slippage errors (P-value=0.003) and gap errors (P-value=0.015), number of repetitions and accuracy were similar in both groups (P-value = 0.81 and P-value = 0.20 respectively).

Conclusion: 3D offers superior visual feedback that positively reflects on the VA and accuracy without any evident substantial physiological impact on the operating surgeon, which in turn favourably impact training and patient safety.

Popular medical and health apps targeting patients, and the general public in the UK: Do they conform to basic standards of information portrayal?

Ali Ben-Mussa

Introduction: Smartphones today with their rising popularity and versatile apps have great potential for revolutionising healthcare services. However, this was soon overshadowed by worrying studies over the quality of publically available medical and health apps. These were subject and/or discipline specific, and mostly evaluated partial compliance with information portrayal standards.

Aims: This study aimed to take a broader approach by assessing the most popular medical and health apps in the UK for full compliance with information portrayal standards.

Methods: The top 50 free and paid apps of the “medical” category on both iTunes and Google App stores were evaluated for evidence of compliance with an app-adapted version of the “Health On the Net” foundation principles.

Results: The sample included 64 apps, 34/64 (53%) were on Google Play and 36/64 (56%) were free. None managed to comply with the entire eight principles.

Discussion: Improving the current situation requires raising public awareness, providing tools that would assist in quality evaluation, encouraging developers to use a robust development process, and facilitating collaboration and engagement among the stakeholders

Development of a Rapid Tranquillisation Treatment Algorithm for older adults

Graeme Young

Introduction: Variation in PRN and RT prescribing practices observed in a Dementia Ward, especially with the 58% of patients admitted “out-of-hours”. At time of observation, there was no specific treatment algorithm to inform prescribing practice.

Aims: To establish standardised PRN and RT prescribing practice in older adult psychiatric inpatients through the development of a Treatment Algorithm for RT in Older Adults following audit of current practice.

Methods: Admission procedures were audited, to collate and analyse what, and how, medications were prescribed in accordance with standard criteria. Literature search was conducted. Subsequently, a new Treatment Algorithm was developed in collaboration with Consultants in Old Age Psychiatry.

Results: 27% of RT/PRN medications prescribed at admission were changed at the Consultant-led first ward-round as they were considered inappropriate, found to be more prevalent in patients admitted out of hours. Literature search identified deficiencies in the evidence base for RT.

Discussion: Hypothesised variability in prescribing practices was confirmed, likely perpetuated by a lack of consensus on RT prescribing in the literature. Guidance is necessary to standardise practice and ensure patient safety, and a Treatment Algorithm has been developed to meet this need.



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Audit of Low Intensity Pulse Ultrasound – A retrospective study for its effects on fracture healing at RVH

Sharib Ziya Khan

Introduction: Fractures carry an incidence of 5-10% for non union. Low intensity Pulse ultrasound therapy (LIPUS) can accelerate fracture healing and gives clinical benefit in cases such as delayed or non-unions.

Aim: The objective of this study is to evaluate the efficacy of LIPUS at RVH trauma unit.

Methods: Data was collected retrospectively for 45 patients who underwent LIPUS therapy prescribed via RVH trauma team with regards to time scale from date of injury to diagnosis of delayed/ non-union to final outcome with demographic parameters and smoking status.

Results: Of the 45 patients, 28 (62%) progressed to radiological evidence of union as compared to 8 (18%) with documented non-union despite therapy. The majority (60%) were diagnosed and considered for LIPUS during the 3-6 month period with 72% progressing to radiological union within 3-6 months following the introduction of LIPUS. There was an equal gender distribution with 51% male and 49% female patients with 38% of patients identified as smokers.

Conclusion: LIPUS is clinically effective as a safe and a cost effective non-invasive adjunct to consider for delayed/ non-unions in fractures.

Autism Medical Clinics- a new approach

Julie-Ann Collins

Introduction: NICE guidelines recommend that an Autism assessment includes a medical assessment. In the Belfast Trust children assessed by the Autism Assessment and Intervention Team are not necessarily reviewed by a Paediatrician. Significant non-attendance rates at these Paediatrician led clinics in recent years highlighted the need to review this service.

Aims: The aim of this project was to provide an efficient "New" Autism Medical Clinic service which best serves the children with Autism in the Belfast Trust and is compliant with NICE guidance.

Methods: We implemented a partial booking process and created Trust approved age appropriate "Going to see the Doctor" leaflets (11yrs or >11yrs) which were enclosed with the appointment letter. Four Autism Medical clinics were conducted between June and July 2015.

Results: 28 appointments were allocated. The Did Not Attend (DNA) rate almost halved (44% less) compared with figures in 2013 and 2014. Feedback to date has been generally positive regarding the booking process, the waiting times and the staff encountered at the assessment.

Discussion: The partial booking process to promote patient autonomy and the introduction of patient leaflets to better prepare patients has resulted in a reduction in clinic DNA rates and improved patient/parent satisfaction which has positive implications for resource management.

Improving neutropenic sepsis management in two hospital departments with multidisciplinary teaching

Gerard Walls

Introduction: Neutropenic sepsis (NS) is a common medical emergency in Emergency (ED) and Acute Medicine units (AMU). London Cancer Alliance audit data highlights suboptimal guideline adherence. Management is often initiated by junior doctors with limited Oncology experience.

Aims: To assess and improve NS management in a London district general hospital.

Methods: Data was collected for 6 months on crucial aspects of NS management. A teaching programme for the ED and AMU, delivered by the Acute Oncology Service was designed. A Consultant, Nurse and CMT jointly facilitated educational sessions consisting of an interactive presentation and a forum to discuss barriers. Parameters were re-audited for 6 months.

Results: Proportion of patients receiving the standard of care improved in 11 of 15 parameters. 'Door-to-needle' antibiotic time reduced from 3.3hrs to 1.7hrs. Admission length reduced from 6.2days to 4.2days.

Discussion: An improvement in the proportion of patients receiving standard of care, including door-to-needle antibiotic time was observed. Mean admission length was 48hours shorter following intervention. The teaching programme will be embedded into junior doctor inductions. An e-prescribing tool is in development. Re-audit is required.

Conclusions: Multidisciplinary teaching on a focused topic has the potential to improve an interdepartmental problem.

Abdominal X-rays in acute general surgery: Routine radiation hazard?

Jonathan Donnelly

Introduction: As a surgical SHO in Altnagelvin, I noted that a high volume of admissions had Abdominal X-Rays performed routinely. Given the radiation exposure (35 times the dose of a chest x-ray), risk to patients (0.009% increase in cancer risk), and cost (£16 per AXR), I undertook a retrospective audit to determine whether or not these AXRs were being done appropriately.

Aims: To evaluate if AXRs requested on the General Surgery take are appropriate as per IRMER Guidelines. Target: 100%.

Methods: - Review of Surgical take records over a 2 week period, including differential diagnosis - Review of AXR requests, and final report, - Comparison of requests with IRMER guidelines

Results: - 52% of Admissions got AXRs, - 80.7% were inappropriate, - 67% were reported as normal

Discussion: AXRs requested seemed to be to rule out obstruction or perforation, despite a lack of clinical suspicion. Most Surgical consultants expect that anyone presenting with abdominal pain will have an AXR, and awareness of the IRMER guidelines for appropriate requests is seemingly non-existent. I presented this audit to my surgical colleagues, and posted the IRMER guidelines around the surgical assessment areas for reference. Re-audit is taking place currently.

Reducing Surgical Site Infection (SSI) rates after Caesarean Section

Susan Addley

Introduction: Last year the NHS Caesarean section rate increased from 25.5% to 26.2%. Surgical site infection (SSI) is a common post-operative complication. Elevated BMI and diabetes - both increasing amongst the maternal population - add to risk of SSI. SSIs often lead to a negative maternal experience and also impact adversely on resources.

Aims: A multi-disciplinary quality improvement project was designed to:

Improve clinical practice to reduce rates of SSI, Educate staff in SSI recognition

Educate patients in wound-care, Improve SSI reporting rates

Methods: Intra-operative measures were introduced: standardised skin preparation with 'Chloroprep' and administration of intravenous antibiotic prophylaxis prior to knife-skin. Midwifery staff were trained by infection control and tissue viability teams in symptoms and signs of SSI; and 48-hour wound-dressing introduced. A patient information wound-care leaflet was developed and administered on discharge. Staff were educated in completion of RISC monitoring forms.

Results: SSI rates reduced from 18% in 2012 to 6% in 2015, below the acceptable standard of 10%. HISC form completion increased from 35% in 2008 to >70% in 2015.

Discussion: Reduced SSI rates increase patient safety, improve maternal experience and reduce demands on resources.

What's holding you(R) back? Tertiary Care Imaging in metastatic spinal cord compression

Umberto Pisano

Introduction: Metastatic spinal cord compression (MSCC) refers to spinal cord/cauda equina compression by direct pressure and/or induction of vertebral collapse or instability by metastatic spread or direct malignancy extension.

Aims: To ascertain compliance with the MSCC NICE guidelines and explore the characteristics of the populations undergoing imaging.

Methods: Retrospective analysis of patients who underwent urgent whole-spine MRI extracted from radiology database between 01/07/2015-30/09/2015. Data collection included demographics, diagnosis, symptoms, MRI outcome and time between request and report. Dichotomous variables analysis was performed via Chi-square; for continuous variables a Mann-Whitney was used. A p-value <5% was significant.

Results: 83 patients were included. Median age was 66 (IQR 58-73). There were 42 females (42.2%). Back pain was the commonest indication (84.3%). Motor (30.1%) and sensory symptoms (15.7%) were less frequent, followed by urinary/bowel disturbance (12%). Despite a pre-existing spinal metastases in 41% of patients, only 6 (6.3%) suffered from MSCC. The median time between referral and MRI report was 2 days (IQR 1-5): the standards were partially met.

Discussion: MSCC patients didn't display differences of age (p=0.38), sex (p=1.0) or presenting symptoms (p>0.5) from the others. A Root Cause Analysis is being carried out with involvement of the Oncology department. Greater numbers are required to study variables associated with MSCC.

Assessing the first year of a Primary Percutaneous Coronary

Intervention (PPCI) service, east of region.

Judith Tweedie

Introduction: In September 2013 24/7 PPCI was rolled out across the eastern region of Northern Ireland.

Aim: The aim of this project was to evaluate the first year outcomes of the primary percutaneous coronary intervention service against national standards.

Methods: Retrospective analysis of all patients activating the primary percutaneous coronary intervention service between 30/09/2013 and 30/09/2014 including call to balloon time (CTB) and door to balloon time (DTB).

Results: 720 activations of the PPCI team between 30/09/2013 and 30/09/2014. 54% originated from NIAS and 39% for emergency departments (ED). 79% of patient had a CTB less than 150 minutes. No statistically significant difference in CTB with age and gender. Patients admitted via ED were 40 times more likely (OR=40, CI: 21-75) to have CTB <150mins. For every one year increase in patient age, there was a 3% reduction (OR=0.97, CI: 0.94, 1.00) in the odds of meeting DTB target (p=0.020).

Discussion: The East of Region PPCI demonstrated key objectives of CTB and DTB in keeping with national standards. Further analysis of effect of age on DTB is required.

Formalisation of the Plastic Surgery handover process

Andrew Robinson

Introduction: Several potential areas for improvement with respect to morning handover in the Plastic Surgery department were identified in the recent GMC survey. It is recognised that improper handover can be a major contributory factor to human error and patient harm^{1,2}.

Aims: The aim of our project was to ensure that an efficient and comprehensive handover process is implemented and utilised.

Methods: Using the PDSA cycle a handover proforma was devised. A time and place was agreed for the meeting. The proforma was piloted for one week. Following initial verbal and written feedback the template was adjusted. Six weeks following implementation, a further PDSA cycle was implemented and attendees were asked to complete a questionnaire.

Results: The PDSA approach has facilitated the implementation of a multidisciplinary team (MDT) morning handover meeting. The questionnaire had a 60% response rate. The handover sped up the ward round and allowed planning with regards to trauma patients. The proforma contained enough pertinent information to enhance patient care.

Discussion: The introduction of a daily MDT handover meeting supplemented with a handover proforma has increased the knowledge of issues affecting current inpatients, leading to a more efficient ward round and planning of the trauma service.

References: ¹General Medical Council – Good Medical Practice 2013. ²British Medical Association. Safe handover: safe patients. Guidance on clinical handover for clinicians and managers. London: BMA, 2004.

Audit of Scan Documentation

Christopher Brown



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Introduction: Documentation of radiology reports in patient case notes is essential for medico-legal reasons and patient safety. Anecdotally this was not being appropriately carried out in our unit.

Aims: 100% of scans reports to be documented in patient notes by completion of morning ward round the day after result reported.

Methods: Patients who had investigations reported between 7th -14th November 2014 within surgical unit of Causeway Hospital were identified. Individual case notes were analysed for documentation of result. Documentation of report's conclusion felt appropriate. Audit was limited to scans (CT and USS) with plain films excluded. Result of first cycle presented at unit-based teaching session. Second cycle completed (12th -24th March 2014).

Results: 1st cycle: 19 surgical patients identified (9 CT and 10 USS); 12/19 scan results appropriately documented by following day ward round (63.2%)

2nd cycle: 19 patients included (14 CT and 5 USS); 17/19 scan results documented in the notes (89.5%). Improvement from 63.2%.

Discussion: the 1st cycle of data collection revealed a poor rate of documentation. Following the education of the team regarding this issue, the second cycle of data collection demonstrated a significant improvement but not 100%.

Audit of Red Flag Referrals for suspected colorectal cancer

Christopher Brown

Introduction: Red flag referrals are for suspected cancer. Northern Ireland Cancer Network (NICAN) provides guidelines. This project audited referrals for suspected colorectal cancer (CRC) to surgical team in Causeway Hospital.

Aims: 100% of referrals in accordance with NICAN guidelines; 100% of patients referred seen within 14 days.

Methods: Red flag referrals for suspected CRC included (July-August 2014). Details of referral and outcomes for each patient found by analysis of Electronic Care Record (ECR).

Results: 55 patients identified. 39 referrals analysed with 16 not found on ECR. 15/39 referred appropriately (38.5%) with 24/39 not referred appropriately (61.2%). 11/55 patients seen within 14 day target (20%). 5/55 patients diagnosed with colorectal cancer (9.1%) with 100% being referred appropriately. 5/15 appropriate referrals led to cancer diagnosis (33%) with 0/24 inappropriate referrals

leading to cancer diagnosis.

Discussion: The majority of referrals for suspected CRC are not in accordance with NICAN guidelines. Appropriate referral associated with significant probability of diagnosing CRC (33%) with very low probability in those referred inappropriately. Improvements to reduce inappropriate referrals (e.g. proforma) and subsequent impact on waiting times may be possible.

