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Abstracts

Junior Doctors' Prize Evening 4th November 2010

ORAL PRESENTATIONS

DEVELOPMENT OF BIOMARKERS TO PREDICT MALIGNANT PROGRESSION OF BARRETT'S OESOPHAGUS

J Ahmad, K Arthur, P Maxwell, A Kennedy, L Murray, B Johnston, D McManus.

Introduction: The incidence of oesophageal adenocarcinoma (OAC) has increased dramatically over recent years and Barrett's oesophagus (BO) is the most established risk factor for its development. Endoscopic surveillance of BO has been widely advocated but hinges on assessment of repeated endoscopic biopsies, which is problematic. The use of biomarkers presents an opportunity to reduce sampling bias and improve our ability to risk-stratify these patients. We evaluated three novel biomarkers in the setting of BO, low grade dysplasia (LGD) and OAC.

Methods: The biomarkers were immunostained on archived biopsy materials and assessed for expression. 25 cases each of BO, LGD and OAC were included along-with 25 cases of oesophagectomy for OAC.

Results: P504S did not express in BO. Its expression was significant in cases of LGD (56%), OAC (40%) and resections (60%). CD133 also did not express in BO or LGD. It was up-regulated in cases of OAC (24%) and resections (68%). Twist expression was weak in BO and LGD. It was significantly over-expressed in cases of OAC (56%).

Discussion: This cross sectional study has shown increased expression of P504S, CD133 and Twist in the metaplasia-dysplasia-adenocarcinoma sequence and has suggested their possible role as potential biomarkers of Barrett's progression.

LEFT MAIN STEM STENOSIS - IMPROVING ELECTROCARDIOGRAPHIC DIAGNOSIS OF ACUTE MYOCARDIAL INFARCTION IN PATIENTS PRESENTING WITH CHEST PAIN

M Daly, M Harbinson, J Adgey.

Introduction: Non-invasive diagnosis of acute myocardial infarction (AMI) complicating left main stem (LMS) stenosis is challenging, as the characteristic abnormalities on 12-lead ECG have low diagnostic sensitivity.

Methods: Consecutive patients presenting with acute ischaemic-type chest pain from 2000-10 were analysed. Entry criteria comprised 12-lead ECG and Body Surface Potential Map (BSPM) at presentation, cardiac troponin T (cTnT) ≤ 12 hrs and coronary angiography during admission. Significant LMS stenosis was ≥ 70% luminal narrowing on angiography. cTnT ≥ 0.03µg/L defined AMI.

Results: Enrolled were 2810 patients, 116 (4.1%) of whom (age 67±10; 81% male) had significant LMS stenosis. Of these, a significant proportion had hypertension (p=0.016), reduced eGFR (p=0.024) and AMI (p<0.001) and had greater likelihood of death within 24-hrs of symptom-onset (Adjusted OR: 6.61; 95%CI: 3.96–10.57, p<0.001). On ROC analysis of 12-lead ECG criteria, c-statistics were: 0.580 for Minnesota STEMI, 0.596 for ST-elevation (STE) ≥0.05mV in lead aVR, 0.618 for T-wave inversion in ≥2 contiguous leads (CL) and 0.630 for ST-depression in ≥2CL. BSPM STE occurred in 85/116 (73%) patients (c-statistic 0.800 [95% CI: 0.720-0.881; p<0.001]). Of these, 62 (73%) had STE in either the high right anterior or right ventricular territories not identified by the 12-lead ECG.

Discussion: In patients with significant LMS stenosis presenting with acute ischaemic-type chest pain, BSPM improves diagnosis of AMI through detection of STE beyond the territory of the 12-lead ECG.

VALUE OF AXILLARY ULTRASOUND AS A PRE-OPERATIVE STAGING PROCEDURE IN BREAST CANCER – A PILOT STUDY

P Davey, M Stokes, J McKillen, C Majury, J Newell, R Kennedy, S Kirk.

Introduction: The aim of this study was to determine if pre-operative axillary assessment by ultrasound and fine needle aspiration cytology (FNA) would predict node positivity and reduce re-operation rate in sentinel node positive patients.

Methods: 119 consecutive, clinically node negative patients who had undergone pre-operative axillary assessment were analysed. Ultrasound findings were categorised as normal, suspicious or malignant. Ultrasound guided FNA was performed on all suspicious nodes. Patients with a normal or suspicious scans and benign FNA were offered sentinel node biopsy. Patients with a positive assessment underwent axillary node clearance (ANC).

Results: Eighty-two scans (69%) were reported as normal. Of these, 63 were node negative on pathological assessment (77%), 19 were node positive (23%). Sixteen (13%) radiologically suspicious ultrasound scans had a benign FNA. Two were subsequently found to be node positive. Twenty-one patients (18%) were reported as having malignant nodes on ultrasound. Nineteen of these were positive on pathology. Two were false positive (90 % PPV). In total, 40 of the 119 patients were node positive. Twenty-one patients had a second axillary procedure. The use of axillary ultrasound preoperatively

resulted in 19 of the 119 patients (17%) avoiding further axillary surgery.

Discussion: Preoperative axillary ultrasound with FNA in clinically node negative patients identifies a proportion who have lymph node metastases thus preventing a number of patients from having a second axillary procedure. Nodal assessment with ultrasound should be routine for all patients undergoing sentinel node biopsy.

A PROSPECTIVE STUDY OF IMAGING MODALITIES FOR COLORECTAL LIVER METASTASES

C Jones, S Badger, S Gillespie, B Kelly, P Ellis, M Love, J Clarke, L McKie, T Diamond, P Kennedy.

Introduction: Accurate detection of colorectal liver metastases (CRLM) is paramount to aid prompt treatment. This prospective study aimed to compare 3 modalities of liver specific imaging in the detection of CRLM.

Methods: Consecutive patients with CRLM underwent computerised tomographic arterial portography (CTAP), magnetic resonance imaging (MRI), and positron emission tomographic scan (PET-CT). Two blinded radiologists for each modality reviewed the scans by consensus. Group 1 included those suitable for surgical resection, and radiological findings were compared with histopathology. Sensitivity, specificity, and overall accuracy for each investigation were calculated. Group 2 included patients deemed unresectable, and correlation of results between modalities were determined. Long-term survival was calculated. Ethical approval and written consent was obtained.

Results: 55 patients from September 2002 to May 2004 were included. In group 1, 28 CRLM were identified. 15 were identified by all 3 modalities.

	CTAP	MRI	PET-CT
Accuracy	83.7%	90.6%	82.6%
Sensitivity	82.1%	78.6%	57.1%
Specificity	84.4%	96.5%	94.8%

5-year survival was 43.7%. In group 2, correlation of results between MRI and PET-CT was (62.1%), followed by MRI/CTAP(51.4%), then CTAP/PET-CT(35.0%). 5-year survival was 15.6%.

Discussion: MRI of liver provides the most accurate pre-operative assessment of CRLM, for which there is favourable 5-year survival.

MALE BREAST CANCER TREATMENT AND OUTCOMES; A RETROSPECTIVE COHORT STUDY

S McCain, AR Harris, RJ Kennedy, SJ Kirk.

Introduction: Male breast cancer accounts for 1% of breast cancers and is often diagnosed at a more advanced stage than female breast cancer. There is a lack of consensus regarding best treatment. The aim of this study was to determine patient demographics, treatment and outcomes in our unit.

Methods: Unit policy is to treat male breast cancer on the basis of tumour biology, staging and co-morbidity. Hospital breast cancer database analysis and retrospective chart review was used to obtain data.

Results: 2563 patients were diagnosed with breast cancer between 1993-2009, 24 were men. Median age was 69 years. All had surgery. Median tumour size was 19mm with a median NPI of 3.39. Six patients had node positive disease. Eleven patients had radiotherapy, 22 received tamoxifen and none had chemotherapy. Median follow-up was 70 months, with overall 5-year survival of 67% and 5-year disease free survival of 90%. No deaths were due to breast cancer or related to treatment. No patients had local recurrence, one developed systemic relapse.

Discussion: Outcome for male breast cancer in our unit is similar to that of female breast cancer and better than described in the literature. Male breast cancer should be treated proactively, no differently from female breast cancer.

ONCOPLASTIC OUTCOMES WITH IMPLANT BASED BREAST RECONSTRUCTION AND RADIOTHERAPY: AN 8 YEAR RETROSPECTIVE ANALYSIS

C McGoldrick, D Brady, S Sinclair.

Introduction: Capsular contraction is a recognised complication of implant based breast reconstruction with published rates ranging from 28% to 51% in patients undergoing radiotherapy. This results in a painful deformed breast which often requires revision surgery. It has been suggested in recent literature that immediate-delayed reconstruction with a two stage procedure may reduce the capsule formation rates. Our institution has favoured single stage immediate reconstruction, irradiating a permanent expander implant in situ.

Methods: Identified patients with implants from 2000 in a single institution who received radiotherapy (n>102).

Results:Median age of the cohort was 46, with a mean time of follow-up of 4.84 years (range 1-9 years). No significant difference in the rates of capsule formation between immediate (36%) and delayed (31%) groups. Those in immediate group proceeded to revision surgery significantly less frequently (30% vs 12%) and developed capsule later (955 vs 534 days). There was no significant difference in rates of disease recurrence or mortality in either group.

Discussion: Our study has demonstrated equivalent capsule formation rates in a single stage procedure. These patients developed a capsule later and were less likely to require revision surgery, with equivalent oncological outcomes.

POSTER PRESENTATIONS

THE CONTRIBUTION OF WCC AND CRP IN DIAGNOSING APPENDICITIS

K Booth, C Magee, S Badger, C Weir.

Introduction: The diagnosis of acute appendicitis continues to pose problems for the surgical trainee with significant negative appendicectomy rates. The aim of this study was to determine the contribution of white cell count (WCC) and C-reactive protein (CRP) to its diagnosis.

Methods: Patients referred with suspected appendicitis were prospectively enrolled from February to August 2009. CRP and WCC on presentation, diagnosis, operative findings and pathology results were recorded. Continuous variables were expressed as mean (±SD) and compared using ANOVA.

Results: 112 patients were included with average age 24.1 years (±17.1). Fifty-eight underwent appendicectomy, which gave a negative appendicectomy rate of 27.6%. Positive pathology was associated with higher WCC (14.4±4.0 vs. 9.1±4.0; $p<0.0001$) and CRP (59.4±66.9 vs. 29.1±36.5; $p=0.09$). Patients managed non-operatively (n=50) had lower WCC ($p=0.002$) and CRP ($p=0.001$). WCC was less sensitive than CRP (78.6% vs. 88.1%) but more specific (81.2% vs. 18.8%) in the diagnosis. Considered

in combination, sensitivity rose to 93.8% and specificity to 50.0%.

Discussion: WCC is a more specific diagnostic aid but sensitivity is improved by measuring both. The interpretation of these tests in light of the clinical history and examination findings is paramount and therefore they cannot be relied upon in isolation.

DYNAMIC MRI CHANGES IN A CASE OF AUTOIMMUNE LIMBIC ENCEPHALITIS.

J Campbell, J Craig.

Introduction: Limbic encephalitis is a condition often characterised by memory disturbance, confusion, behavioural changes and temporal lobe seizures. It may have an underlying autoimmune or paraneoplastic aetiology. The most commonly associated antibody is directed against the voltage gated potassium channel complex. Limbic encephalitis typically exhibits characteristic MRI changes within the affected temporal lobe structures. It may respond to immunomodulatory therapy.

Case report: We report the case of a 67 year old gentleman with a sub acute presentation of confusion and short term memory impairment. Initially left sided medial temporal lobe changes were noted on MRI. He subsequently developed seizures with EEG revealing a right sided temporal focus. Repeat MRI revealed resolution of changes in the left temporal lobe but a new area of high signal in the right medial temporal lobe. He was found to have a high titre of voltage gated potassium channel antibodies in the absence of occult neoplasm.

Discussion: To our knowledge such dynamic MRI changes have not been previously reported in this condition. Limbic encephalitis is a rare but important cause of potentially reversible dementia and seizures.

BODY SURFACE POTENTIAL MAPPING IN COMBINATION WITH N-TERMINAL PRO-BRAIN NATRIURETIC PEPTIDE AND CARDIAC TROPONIN T IMPROVES DIAGNOSIS OF RIGHT VENTRICULAR INVOLVEMENT DURING ACUTE INFERIOR MYOCARDIAL INFARCTION

MJ Daly, CG Owens, CJ McCann, IS Young , MT Harbinson, JA Adgey.

Introduction: Right ventricular myocardial infarction (RVMI) with an inferior infarction (AIMI) is associated with increased rates of morbidity and mortality necessitating rapid myocardial reperfusion for their reduction.

Methods: Consecutive patients presenting with acute ischemic-type chest pain were enrolled if they had: NT-proBNP, 12-lead ECG, right-sided ECG (V_3R / V_4R) and Body Surface Potential Map (BSPM) at presentation; cardiac troponin T (cTnT) ≤ 12 hrs; and coronary angiography during admission. STEMI was defined by Minnesota criteria, with AIMI as ≥0.1mV ST elevation (STE) in ≥2 of II, III and aVF with cTnT ≥0.03µg/L. Elevation ≥0.1mV defined STE in either V_3R / V_4R. Clinical diagnosis of RVMI required a triad of elevated venous pressure, clear lung fields and hypotension (SBP<90mmHg) in the context of AIMI. Gold standard definition of RVMI was by RCA stenosis ≥70% proximal to the first major RV branch.

Results: Enrolled were 407 patients (age 62 ± 13 yrs; 70% male). Of these, 72 (18%) had STEMI. AIMI occurred in 39/72 (54%). Of these, 24/39 (62%) had RVMI. Clinical signs had sensitivity 25% / specificity 66%, STE V_4R sensitivity 51% / specificity 60%, and BSPM sensitivity 79% / specificity 87% for RVMI diagnosis. NT-proBNP was significantly higher in those with RVMI compared to non-RVMI (996ng/L v 305ng/L, p = 0.006) and cTnT differed significantly between the two groups respectively (6.81µg/L v 3.26µg/L, p = 0.014). Of those with AIMI, the c-statistic for RVMI diagnosis using cTnT alone was 0.722, NT-proBNP alone was 0.761 and BSPM alone was 0.807. Using the combination of BSPM, NT-proBNP and cTnT the c-statistic was 0.902 (95% CI: 0.809 - 0.995; p < 0.001).

Discussion: In patients with AIMI, the combination of NT-proBNP, cTnT and BSPM identifies those with RVMI thus identifying a group where early reperfusion is paramount.

ACUTE KIDNEY INJURY IN BURNS PATIENTS: PROGRESSION AND PREDICTIVE FACTORS

D-T Black, B. Fogarty, K.Khan, A.Bedi .

Introduction: Patients who have suffered an acute burn injury are at risk of developing organ dysfunction leading to mortality. The development of acute renal failure significantly increases the risk of mortality. Prompt diagnosis of AKI and assessment of its progression is essential as subsequent burn outcome and survival is affected.

Methods: Data was collected for all burns patients admitted to the Regional Intensive Care Unit in the RVH for four years. Patients were identified as having an AKI as per to the RIFLE criteria. The progression of AKI and predisposing patient factors were examined.

Results: Of the 41 patients, 17 were classified as having acute kidney injury as per the RIFLE criteria (41%) subdivided into Risk: 8 patients, (19%), Injury: 2 patients (5%) and Failure: 7 patients (17%). Mortality rate for AKI patients was 35% and non AKI patients 21%. Factors associated with AKI include age, APACHE II score but not TBSA% burn.

Discussion: The results identify that AKI is prevalent among the burned patient population and early identification of predisposing factors is essential to prevent progression to acute renal failure. The development of acute kidney injury in the burned patient is associated with a higher mortality rate.

LONG-TERM EFFECTS OF VASCULAR ENDOTHELIAL GROWTH FACTOR AND PLATELET COUNT IN OESOPHAGOGASTRIC CARCINOMA.

RT Gray, ME Donnell, JA McGuigan, GM Spence.

Introduction: Vascular endothelial growth factor (VEGF) is an angiogenic cytokine integral to the regulation of tumour angiogenesis. Previous studies in oesophageal cancer describe correlations between circulating VEGF (C-VEGF) and platelet count and also tissue VEGF (T-VEGF) and lymph node metastases. We assessed the prognostic values of C-VEGF, T-VEGF and platelet count in a 10-year follow-up of oesophageal cancer patients.

Methods: Patients undergoing surgery with curative intent were prospectively recruited between February 1999 and August 2000. C-VEGF, derived from both plasma VEGF (P-VEGF) and serum VEGF (S-VEGF) and T-VEGF were assessed using a commercial ELISA. Pre-operative platelet levels were recorded. 10-year follow-up was performed using the Northern Ireland Cancer Registry.

Results: 61 patients were recruited (male=45) with a mean age of 65.7 years (range 39-83). The mean values observed were P-VEGF 32.0pg/mL (range 0-363), S-VEGF 331.2 pg/mL (55.2-926.7), T-VEGF 507.3pg/mg total protein (52.8-3797.5) and platelets 277

x10^9/L (range 102-487). 10-year survival was 19.7% (n=12) with a mean follow-up of 1382 days (range 10-3977). Multivariate analysis demonstrated that a higher T-VEGF level (p=0.016) and a positive tumour resection margins (p=0.031) were significant predictors of mortality.

Discussion: T-VEGF appears to be a significant predictor of long-term outcome in patients with oesophagogastric cancer undergoing curative resection.

THE TRUE COST OF GALLSTONES

C Jones, A Mawhinney, R Brown.

Introduction: Gallstone related disease accounts for a large proportion of NHS expenditure. This study aimed to review the costs of the patient journey from referral to treatment, and propose guidelines to provide an efficient streamlined service.

Methods: All cholecystectomies performed in one unit in 2009 were reviewed. Patient demographics, outpatient and inpatient episodes, length of hospital stay, and all investigations were recorded. Cost was obtained from the Department of Health. Results were expressed as mean (±SD) and compared using ANOVA.

Results: 132 patients were reviewed. Overall cost from referral to discharge was £4697(±2007) per patient. The largest proportion was surgery contributing £2849(±414), followed by inpatient costs £1527(±1322). Pre-operative outpatient consultations were £174(±144), supplemented by at least one ultrasound £81(±29). Patients who initially presented as an inpatient had an overall larger cost (£6112±1888 vs. £5097±1607;p=0.004). This was largely due to inpatient costs (£2611±1629 vs. £1194±1009;p<0.0001) and not the cost of surgery (p=0.29). Patients who were imaged in primary care prior to referral had a lower overall cost (£4636±1343 vs. £5697±1804;p=0.0005).

Discussion: Emergency presentation and repeat admissions result in higher inpatient costs and should be avoided. Reduced delay to elective surgery through active participation by primary care should be encouraged.

CIRCUMFERENTIAL RESECTION MARGIN (CRM) INVOLVEMENT IN SUPINE ABDOMINO-PERINEAL RESECTION(APER)

P Loughlin, C Stevenson, W Campbell, R Gilliland, K McCallion, R Moorehead, I McAllister

Introduction: APER is associated with increased rates of of CRM involvement and thereby local recurrence, when compared with anterior resection. A recent multi-centre study suggests CRM positivity is reduced from 49.6% to 20%, using a prone cylindrical approach1.

Methods: We conducted a retrospective review of all rectal cancers resected between 2004 and 2009 in a district general hospital, to determine CRM positivity and intra-operative perforation rates in patients who underwent a traditional APER.

Results: 104 patients had surgery for rectal cancer.28(27%) were APERs. 5(18%) specimens had a positive CRM and only1 had intra-operative perforation of the tumour. Of the 69 (66%) who had anterior resections, 7(10%) had a positive CRM and 1 had intra-operative tumour perforation.

Discussion: In our hands the traditional APER may have a comparable rate of CRM involvement to the prone cylindrical approach. Placing the patient in a prone position increases surgical time, has potential anaesthetic implications and may increase morbidity. This area needs further study which would be best done using a randomized controlled trial.

CONTROLLED RELEASE AND DIVIDED DOSE VALPROATE IN PREGNANCY: ARE DOSAGE PEAKS IMPORTANT?

E Mawhinney, J Campbell, A Carr, A Russell, H Smithson, L Parsons, I Robertson, B Irwin, PJ Morrison, B Liggan, N Delanty, S Hunt, J Craig, J Morrow.

Introduction: Use of valproate in pregnancy is known to be associated with a higher risk of major congenital malformations (MCM) than other antiepileptic drugs (AEDs), particularly in doses exceeding 1000mg daily. We aimed to investigate whether there was any evidence to suggest that this increase was related to high serum valproate level peaks rather than total daily dose.

Methods: The UK Epilepsy and Pregnancy register is a 15 year prospective, observational study to determine the risks of MCMs for infants exposed to AEDs in utero. Outcome data was available for 1109 valproate monotherapy exposure pregnancies. We calculated MCM rates and relative risks (RR).

Results: Exposure to valproate in doses over 1000mg daily almost doubled risk of MCM when compared to valproate doses below 1000mg daily (8.86% vs 4.88%, RR:1.7; 95%CI: 1.1, 2.9). There was no difference in risk between conventional valproate and valproate controlled release groups (RR: 1.11; 95%CI: 0.67 to 1.83) or between once daily and divided daily dosing of valproate (RR: 0.99, 95% CI 0.58 to 1.70).

Discussion: This suggests that the higher MCM rates observed for valproate are more likely to be related to total daily dose, rather than instability in serum levels.

CAN EXPIRATORY CHEST RADIOGRAPHS AID EMERGENCY DEPARTMENT JUNIOR DOCTORS IN THE DIAGNOSIS OF SUSPECTED PNEUMOTHORAX?

AT Milligan, D Campbell, B Devlin.

Introduction: All published data recommending expiratory chest x-rays (CXRs) offer no additional benefit to standard inspiratory CXRs in the evaluation of suspected pneumothorax has been performed by radiologists. There is no literature detailing their benefit for junior doctors working in an emergency department. We set out to evaluate their additional benefit to these doctors.

Methods: A retrospective, double blinded, randomised control study was performed. 25 consecutive cases of pneumothorax investigated with paired inspiratory and expiratory CXRs were selected. 25 age, sex and co-morbidity matched control cases were also selected. The films were anoymized with technique labelling removed. These 100 CXRs were randomised and independently interpreted by 4 doctors; 2 consultant radiologists in ideal viewing conditions, and 2 emergency department junior doctors in similar lighting conditions found in an emergency department.

Results: Only 1 case of pneumothorax was missed by a consultant radiologist and this was on an expiratory CXR. With the junior doctors, 12% of pneumothoraces were missed on inspiratory films but seen on the corresponding expiratory film, and 2% pneumothoraces were missed on both films.

Discussion: Although of no benefit to consultant radiologists, expiratory CXRs do help junior doctors diagnose pneumothoraces.

THE BARRIER METHOD: IS IT ENOUGH?

S McCain, AR Harris, K McCallion, WJ Campbell, SJ Kirk.

Introduction: Trainees within some specialties require different skills from others. Aptitude testing can be used, at significant cost, to guide individuals towards a career path. We hypothesised that car parking habits may correlate with medical specialty and aimed to assess car parking habits of consultants to test our hypothesis.

Methods:Assessment of approach and parking in a pass-card controlled consultant car park was monitored. Time was recorded in seconds. Consultants were categorised by specialty and gender.

Results:103 consultant episodes were recorded, 79 male(m) and 24 female(f). Specialty representation was; 28 anaesthetics (22m:6f), 29 medical (18m:11f), 14 radiology (9m:5f) and 32 surgical (30m:2f). Total time for specialty was; anaesthetics (median 82, first quartile 76-3rd quartile 91); medicine (112, 96-136); radiology (86, 70-103) and surgery (68, 61-71) ($p<0.05$). Manner of approach (card ready, card not ready) differed by specialty ($p<0.05$); anaesthetics (15,13); medicine (12,17), radiology (11,3) surgeons (30,2). There was no difference between males and females outwith specialty.

Discussion: Total time taken to park a car differed between specialties. Surgical consultants were fastest, followed by anaesthetics and radiology, with medical consultants slowest. Gender was not an influencing factor. If reproducible, this could provide a low cost method of guiding junior doctors in career selection.

THE DEMISE OF THE OBSTETRIC FLYING SQUAD IN BELFAST?

M McCauley, R McClelland.

Introduction: To determine the role of the obstetric flying squad in the greater Belfast area.

Methods: Retrospective study of all flying squad requests over a ten year period.

Results: 86 requests for the flying squad were officially lodged over the ten year period. The average time taken for the flying squad to reach the patient was longer than the standard ambulance. In the majority of cases 54%, the baby was born before arrival (BBA). The second most common request (16%) was due to minor PV bleeding. No patients bleed heavily, nil were clinically shocked, nil required resuscitation and nil patients required a blood transfusion. 35% of patients required no treatment whatsoever and were simply transported to hospital.

Discussion: The original function of a flying squad was to provide primary resuscitation for women with life-threatening complications of pregnancy. However, over the past ten years in Belfast it has increasingly been used as a means of transport to hospital. In the present day climate of budget cuts we are no longer able to justify the provision of the flying squad service.

ATYPICAL FEMORAL FRACTURES: A COMPLICATION OF PROLONGED BISPHOSPHONATE USE

S. McCauley, R. Thompson, J. Elliot, C. Moran.

Introduction: Recent literature suggests a link between prolonged bisphosphonate use and the occurrence of low energy subtrochanteric and femoral shaft atypical fractures with a characteristic radiographic appearance – a transverse component in an area of cortical hypertrophy. Using data from RVH and University Hospital Nottingham, we performed the first UK-based, and one the largest retrospective reviews of such cases between January 2008 and January 2010.

Methods: Radiographs were reviewed to identify those fractures that had an atypical fracture pattern. For each patient, bisphosphonate use and duration, mechanism of injury and history of prodromal pain were recorded. Corticosteroid use, history of metabolic bone disease, and history of previous fractures were also ascertained. Information was extracted from medical records, fracture databases and patients' GP.

Results: 159 femoral shaft fractures identified, with 17 displaying atypical fracture pattern, 15 (88%) of which were on Bisphosphonates. 77 subtrochanteric fractures identified, with 11 displaying atypical fracture pattern, 8 (73%) of which were on Bisphosphonates. Total mean treatment duration of 4.5 years.

Discussion: Our experience is in line with reports of atypical fractures in these regions appearing to be associated with long-term bisphosphonate use. The proposed mechanism is impaired bone remodelling, leading to the accumulation of microfractures and, ultimately, complete fracture. The extent of the problem in the UK is unknown, thus plans to undertake an audit focussing on subtrochanteric fractures based on the National Hip Fracture Database are being developed. It is hoped that this will allow these fractures to be more accurately characterised and the direction for research determined.

LONG-TERM EFFECTS OF STREPTOCOCCUS BOVIS INFECTION ON COLORECTAL OUTCOMES

A McKenna , ME O'Donnell, R McMullan, ST Irwin.

Introduction: Streptococcus bovis, a non-enterococcal group D streptococcus, is associated with colorectal carcinoma (CRC) and hepatic dysfunction. This study assessed the implications of S. bovis bacteraemia on long-term colorectal outcomes.

Methods: A retrospective cohort study was performed to assess patients with a history of S. bovis bacteraemia between January 2000 and March 2009. Clinical records complemented with follow-up general practitioner questionnaires were reviewed for data regarding demographics, medical co-morbidities, date of admission, clinical presentation, investigations, surgical interventions and final clinical outcome.

Results: 61 positive S. bovis blood cultures from 43 patients were included (M=25, mean age 67.1, range 44-88 years and F=18, mean age 67.6, range 0.5-90 years). 33 and 10 patients had 1 or more positive S. bovis blood culture results respectively which were all performed for pyrexia (temperature>38oC). 5 patients had a previous diagnosis of a colorectal lesion prior to their positive S. bovis result (CRC=4, adenoma=1). 13 of the remaining 38 patients underwent colonoscopy on their index admission where 3 CRCs and 7 adenomas were diagnosed. From the remaining 25 patients, only 1 colorectal carcinoma was detected in a subsequent admission. All colonoscopies were performed from 7- to 468-days following a positive S. bovis culture with 7 colonoscopies within 30-days. Patients with greater than one positive S. bovis culture were more likely to have a colonoscopy performed ($r=0.45$, $p=0.003$) where such patients were also shown to have gastroscopy performed as well ($r=0.49$, $p=0.001$). In patients undergoing colonoscopy, a significantly higher colonic biopsy rate ($r=0.77$, $p<0.001$) was identified which significantly correlated with a CRC diagnosis ($r=0.38$, $p=0.013$). 21 patients are currently alive while 22 patients have died during the study period (median follow-up 654 days,

IQR 36.5-1652 days). 8 of these patients died within 24 hours of hospital admission. 14 patients underwent gastro-intestinal follow-up including 7 repeat colonoscopies while 29 patients had no gastrointestinal follow-up. Although colonoscopic investigation correlated with a diagnosis of CRC, Kaplan Meier survival analysis demonstrated no significant difference in patient outcomes for patients who did and did not undergo colonoscopy (log-rank, p=0.16).

Discussion: Although colonoscopy does not affect long term patient outcomes, the authors recommend a solitary screening colonoscopy for all patients with a history of S. bovis bacteraemia as a colorectal pathology was detected in 76.9% (10/13) of all patients who underwent index admission colonoscopy.

TAKOTSUBO CARDIOMYOPATHY IN A PATIENT WITH STEROID INDUCED PSYCHOSIS- A RARE CLINICAL ASSOCIATION

H Wallace, R Stewart, A Hamilton, S Walsh.

Takotsubo cardiomyopathy, also known as stress-induced cardiomyopathy is a recently described syndrome characterized by left ventricular dysfunction which mimics acute coronary syndrome. We describe a case of Takotsubo cardiomyopathy precipitated by a steroid induced psychosis.

A 62 year old lady with an established history of chronic lymphocytic leukaemia, presented to the emergency department with central chest pain and dyspnoea. She had no known risk factors for cardiac disease. In the six days preceding admission she had received 1000mg boluses of Prednisolone daily. She displayed characteristics in keeping with a steroid induced psychosis. Initial ECGs showed ST segment elevation. Troponin measured 0.13ng/ml (Normal <0.03ng/ml).

Echocardiography demonstrated apical akinesia and a left ventricular systolic ejection fraction of 15%. Coronary angiography confirmed normal coronary arteries and ventricular angiography findings were consistent with Takotsubo cardiomyopathy.

The patient was treated with anxiolytics,beta blockers and an ACE inhibitor. Echocardiography one week following admission calculated the left ventricular systolic ejection fraction at 55%.

There are numerous case reports of Takotsubo cardiomyopathy occurring following extreme emotional stress. In this case mania was induced with high dose steroids. This case suggests that acute psychiatric stressors,as well as emotional and physiological factors may lead to the development of Takotsubo cardiomyopathy.

CINACALCET: A NOVEL TREATMENT FOR COGNITIVE DECLINE IN A CASE OF PRIMARY HYPERPARATHYROIDISM.

HJ Wallace, IR Wallace, P McCaffrey.

Hypercalcaemia is common in the elderly and is most often due to primary hyperparathyroidism. It may result in significant morbidity due to multiple systemic effects. Parathyroidectomy is the treatment of choice, with cinacalcet a second choice medical therapy. We describe a case of primary hyperparathyroidism associated with significant cognitive decline. Cinacalcet resulted in a significant improvement in serum calcium, cognitive function and functional capacity.

An 85 year old lady was found to have an elevated serum corrected calcium concentration of 2.8 mmol/l (2.1 – 2.6 mmol/l), and an elevated plasma parathyroid hormone concentration of 390 pg/ml (10 – 85 pg/ml). Calcium concentrations fell following rehydration. She had a past history of symptomatic renal calculi, no previous fractures and renal function was normal. She declined parathyroidectomy.

On admission one year later Folstein was 6/30 and serum corrected calcium was 2.92 mmol/l. Serum calcium was resistant to repeated treatment with intravenous fluids, diuretics and bisphosphonates. Cinacalcet was commenced. After four weeks serum corrected calcium had normalised (2.15 mmol/l), Folstein was 26/30, and mood and functional status improved. She has now returned to independent living.

Cinacalcet was highly effective in this case, resulting in a normalisation of serum calcium and significant functional and cognitive improvements.

PYLORIC STENOSIS – DO MALES AND FEMALES PRESENT DIFFERENTLY?

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Introduction: In infants with pyloric stenosis we explored (a) if males develop symptoms and present to hospital earlier than females and (b) does any delay in presentation influence the severity of metabolic derangement.

Method s: A retrospective casenote review of 99 infants who underwent pyloromyotomy over a two year period in our hospital. The data collected included: sex, age at onset of symptoms, age at presentation to hospital and initial blood results.

Results: The group comprised 84 males and 15 females. Symptoms developed at 26 (0-70) days in males and 35 (0-77) in females. (Mann-Whitney U=428,p=0.04 two tailed). Males presented to hospital at 34 (13-91) days, females at 45 (13-98) days (Mann-Whitney U=391,p=0.01 two tailed). The differences between males and females for (1) age at onset of symptoms and (2) age at presentation to hospital became more significant when weighted averages were calculated using SPSS. The lower weighted averages for male infants can be seen in the final table. Increasing duration of symptoms showed a positive correlation with fall in Chloride level. (Spearman's rho:rs= -0.2,p=0.049 two tailed). There was a positive correlation between duration of symptoms and bicarbonate level but this was not significant. (rs=0.06,p>0.05 two tailed). There was a positive correlation between duration of symptoms and pH, but this was not significant (rs=0.12,p>0.05 two tailed).

Discussion: In our hospital, females with pyloric stenosis develop symptoms and present significantly later than males. This should be considered when assessing a female with vomiting outside the usual 20-40 day range.

