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ASPIRIN THERAPY IS ASSOCIATED WITH REDUCED MORTALITY IN PATIENTS WITH ACUTE LUNG INJURY

Boyle AJ, Digangi A, Mottram LJ, Hamid U, McNamee L, White G, Cross LJM, McNamee J, O'Kane C, McAuley DM.

Introduction: Platelet activation has a role in the pathogenesis of acute lung injury (ALI). Observational data suggests aspirin treatment may prevent the development of ALI in critically ill patients. However, it is unknown if aspirin usage alters outcomes in patients with established ALI.

Methods: All patients with ALI were identified prospectively in a single large regional medical and surgical Intensive Care Unit (ICU) between December 2010 and July 2012. Demographic, clinical, and laboratory variables were recorded. Aspirin usage, both pre-hospital and during Intensive Care Unit (ICU) stay, was included. The primary outcome was ICU mortality. We used univariate and multivariate analyses to assess the impact of these variables on ICU mortality.

Results: Two hundred and two patients with ALI were included. 56 (28%) of these received aspirin either pre-hospital, in ICU, or both. Using multivariate logistic regression analysis, aspirin was found to be protective for ICU mortality.

Conclusion: Aspirin usage is associated with reduced mortality in patients with ALI. Whilst trials are ongoing to assess if aspirin can prevent ALI, these new data support the need for a clinical trial to investigate if aspirin improves outcomes in patients with established ALI.

MALFORMATION RISKS OF ANTI-EPILEPTIC DRUG MONOTHERAPIES IN PREGNANCY: AN UPDATE FROM THE UK AND IRELAND EPILEPSY AND PREGNANCY REGISTERS

Campbell E, Kennedy F, Russell A, Smithson WH, Parsons L, Robertson I, Irwin B, Liggan B, Delanty N, Morrison PJ, Hunt SJ, Craig J, Morrow J.

Aim: To assess risk of major congenital malformations (MCMs) from exposure to anti-epileptic drugs (AEDs) during pregnancy.

Methods: Fifteen-year prospective observational study from 1996 until 2012. Outcomes are reported for valproate,

carbamazepine, lamotrigine and levetiracetam monotherapy exposures. Main outcome measure is the MCM rate.

Results: Informative outcomes were available for 5510 cases. 1290 women were exposed to valproate monotherapy, 1718 to carbamazepine monotherapy, 2198 to lamotrigine monotherapy and 304 to levetiracetam monotherapy. The MCM risk with valproate monotherapy exposure in-utero is 6.7% (95% CI 5.5%-8.3%), compared to 2.6% with carbamazepine (95% CI 1.9%-3.5%), 2.3% with lamotrigine (95% CI 1.8%-3.1%) and 0.70% (95% CI 0.2%-2.5%) with levetiracetam. A significant dose effect is seen with valproate ($p=0.0006$) and carbamazepine ($p=0.03$) exposed pregnancies, but not with exposure to lamotrigine ($p=0.26$) or levetiracetam ($p=0.09$). MCM rate for even the highest doses of lamotrigine (>400mg daily) were lower than the MCM rate observed in pregnancies exposed to less than 600mg daily of valproate (3.4% compared to 5.0%, $p=0.35$).

Conclusions: AED exposure during pregnancy increases the risk of MCM in the infants of women with epilepsy. In utero exposure to valproate carries a significantly higher MCM risk than lamotrigine ($p=0.0001$), levetiracetam ($p=0.0001$) or carbamazepine ($p=0.0001$) monotherapy. Our results are in contrast to previous suggestions that the MCM risk with exposure to low doses of valproate is preferable to that seen with exposure to high doses of lamotrigine. Together with recently published neurodevelopmental data, this data suggests that either lamotrigine or levetiracetam should be used as drugs of choice over valproate, even at low dose, in women of childbearing age with epilepsy.

THE USE OF HIGHLY CONCENTRATED HYPERTONIC SALINE IN THE TREATMENT OF TRAUMATIC BRAIN INJURY RELATED REFRACTORY INTRACRANIAL HYPERTENSION.

Major EH, O'Connor P, Mullan B.

Background: In recent years hypertonic saline has attracted increasing interest in the treatment of traumatic intracranial hypertension, and has a number of documented and theoretical advantages over other hyperosmolar agents. To date, no consensus has been achieved on the safest and most effective HTS concentration for administration.

Aims: The purpose of this paper was to evaluate the efficacy of intravenous bolus administration of highly concentrated

(30%) hypertonic saline (HTS) in the treatment of refractory intracranial hypertension secondary to traumatic brain injury.

Methods: Patients were treated with an intravenous bolus of 10mls of 30% hypertonic saline. Multiple physiological parameters were measured throughout, including intracranial pressure, mean arterial pressure, cerebral perfusion pressure, pulse and inotrope/pressor requirements. Laboratory investigation pre and post HTS administration included: arterial pH, pCO₂, HCO₃, base excess; serum biochemistry measurements of sodium, potassium, chloride, urea and creatinine; and coagulation studies.

Results: TBI patients saw a rapid and significant reduction in ICP from a baseline value of 28 ± 5.31 mmHg to 18.44 ± 6.17 mmHg at 1-hour post HTS, a statistically significant reduction that was maintained for up to 7 hours. This response was maintained even with repeated HTS administration, which was also associated with an augmented cerebral perfusion pressure from a baseline of 58.0 ± 6.48 mmHg to 76.33 mmHg within 1 hour of HTS administration.

Conclusions: No associated harmful biochemical or haematological abnormalities were noted. In conclusion, highly concentrated 30% HTS appears to be both effective and safe in the management of refractory intracranial hypertension.

DOES RHEUMATOID ARTHRITIS DISEASE ACTIVITY CORRELATE WITH WEATHER CONDITIONS?

Savage EM, McCormick D, McDonald S, Moore O, Stevenson M, Cairns AP.

Background: Patients with rheumatoid Arthritis (RA) often report increasing joint pain and stiffness with colder, wet weather. Previous studies examining weather impact on pain severity have yielded contradictory results¹⁻². The relationship between disease activity in RA patients and weather variance has not been formally examined.

Methods: Patients attending Musgrave Park Hospital, Belfast; with a diagnosis of RA on anti-TNF were invited to participate. A longitudinal analysis of 133 patients was performed. Data collected at 5 time points included TJC, SJC, visual analogue score, ESR, CRP, and DAS-28. This was correlated with maximum/minimum temperature, hours of sunshine, rainfall, relative humidity, pressure and wind-speed from a local weather station on day of attendance. A linear regression analysis was used to determine relationship between weather components, disease activity and pain.

Results: The weather-based components were extracted after a global factor analysis using data from all time-points revealed three components from the seven quantitative variables. Three components indicated by the factor analysis were as follows: temperature component, sunny/dry component, wet/windy component. All components were calculated from z-scores. A significant correlation was noted between low DAS-28 scores and sunny, dry conditions (p=0.001). Sunny

and dry conditions ((hours of sunshine – relative humidity)/2) were associated with a DAS-28 reduction of 0.143 (95% CIs -0.230, -0.057) p=0.001. Higher temperatures (max temperature + min temperature/2) were associated with a DAS-28 reduction of 0.048 (95% CIs -0.129, 0.032), p=0.23. Wet and windy conditions (rainfall + wind-speed – pressure)/3 were associated with a higher DAS-28 (95% CIs -0.098, 0.123) p=0.82.

Conclusions: This study highlights statistically significant lower DAS-28 scores in sunny and dry conditions.

A COMPARISON OF CARDIAC COMPUTERIZED TOMOGRAPHY AND EXERCISE STRESS ELECTROCARDIOGRAM TEST FOR INVESTIGATION OF STABLE CHEST PAIN: THE CLINICAL RESULTS OF THE CAPP RANDOMIZED PROSPECTIVE TRIAL

McKavanagh P, Lusk L, Ball PA, Trinick TR, Duly E, Verghis RM, Agus AM, Walls GW, McCusker S, Stevenson M, James B, Orr C, Hamilton A, Smyth A, Harbinson MT, Donnelly PM.

Aim: The Cardiac Computerised Tomography (CT) for the Assessment of Pain and Plaque (CAPP) study compared the economic and clinical outcomes of using cardiac CT compared to Exercise Stress Test (EST) in the patients with suspected stable chest pain. **Method:** CAPP randomised 500 patients without known coronary artery disease to either EST or cardiac CT. All patients were followed up for clinical outcomes and for angina symptoms with the Seattle Angina Questionnaires (SAQ). **Results:** Of the 500 patients 12 withdrew over the year, with 245 in the EST arm and 243 in CT arm receiving follow up. In the CT arm there were less chest pain Emergency Department attendances and unplanned admissions. Patients in the CT arm also had less secondary investigations and less time to diagnosis. The EST arm had 7 patients who underwent Coronary Artery Bypass Grafting (CABG) and 12 who had Percutaneous Coronary Intervention (PCI), compared to 8 CABG and 29 PCI in the CT arm. There was a significant improvement in domains of the SAQ scores at 1 year in the CT arm compared to EST (p=<0.05). **Conclusions:** Cardiac CT as an index investigation for stable chest pain improved symptoms and clinical outcomes.

SERVICE REVIEW OF THE JOINT EPILEPSY AND LEARNING DISABILITY CLINIC IN THE SOUTH EASTERN HEALTH AND SOCIAL CARE TRUST

Ling P, MacPherson J, Craig J.

Background: There is currently a joint epilepsy and learning disability clinic for the South Eastern Health and Social Care Trust that began in October 2006. The clinic is for patients who would otherwise have to attend separate epilepsy and learning disability appointments.

Aims: Service evaluation and provide information for future comparison with similar services.

Method: There were forty-eight patients who attended the joint clinic during the period of October 2006, when the clinic first began and December 2011. Chart reviews for these patients were completed to evaluate the number of appointments attended and missed, reasons for referral, outcome from attendance at the clinic such as changes in seizure frequency and duration.

Results: The majority of patients attended one appointment (52 %) and missed no appointments (90%). The most common reason for referral was due to increase in seizure frequency (32%) and the most common intervention was change in medications (61%). The majority showed improvement in seizure frequency (68%) with a significant number having improvement in seizure duration (33%).

Conclusion: There was sixty-eight per cent that showed an improvement in seizure frequency. Thirty-three per cent showed an improvement in seizure duration while fourteen per cent had no further seizures. This would suggest that the clinic provides a useful tool to ensure good quality care to those people with learning disabilities and epilepsy.

COAGULATION SCREENING: CHANGE IN PRACTICE AFTER COMPLETED AUDIT CYCLE

McCossan L.

Random coagulation screening is a poor predictor of perioperative bleeding and has a poor yield in detecting haemostatic abnormalities. Current guidelines advocate *selecting* patients requiring coagulation screens using a structured bleeding history. Using a completed audit cycle as the vehicle for implementing change, ensuring guideline adherence, random 'routine' use of the £6.50 coagulation screen has decreased; avoiding patient anxiety, theatre delays, increased pressure on labs and a high cost to an already stretched NHS budget. One hundred surgical inpatients in the UHD were identified, and notes were reviewed to determine reasons for testing which were audited against current guidelines (NICE, GAIN-NI and BCSH) Initial audit found inappropriate testing was widespread; only 23% of samples were guideline adherent. Staff education sessions and poster distribution detailing the uses/limitations of coagulation screening, importance of bleeding history and current guidelines preceded the re-audit and closure of the loop which showed significant improvement; 61% of samples were now appropriate, a 265% increase in guideline compliance. It is clear that this completed audit-cycle has successfully implemented significant change in practice; improved cost efficiency, decreased theater delays, patient anxiety and unnecessary venepuncture; ultimately improving patient care.

IMPACT OF COMORBID ALCOHOL-USE DISORDERS ON CLINICAL OUTCOME AND SUICIDALITY IN BIPOLAR I DISORDER: DATA FROM THE BIPOLAR DISORDER RESEARCH NETWORK (BDRN).

Wethers G, O'Neill FA, Forty L, Di Florio A, Gordon-Smith K, Fraser C, Jones L, Jones I, Craddock N, Smith DJ.

Objectives: Bipolar I disorder (BPI) is known to have high rates of comorbid alcohol-use disorders (AUD) but the impact of this comorbidity on long-term outcomes such as episode recurrence and suicidal behaviour is unclear.

Methods: We compared lifetime demographic and clinical characteristics of illness for individuals with BPI and comorbid AUD (n= 436) to those with BPI without AUD (n=1020) using data from the Bipolar Disorder Research Network (BDRN). A logistic regression approach was used to test for associations.

Results: Comorbid BPI and AUD patients had a worse course of illness with significantly more suicidal ideation and a greater number of depressive and manic episodes compared to patients with BPI alone. Being male, unemployed, a current smoker, current cannabis use and the presence of rapid cycling were also significantly associated with comorbid BPI+AUD. Despite this, our data suggest that those with comorbid BPI+AUD were admitted less frequently to hospital than those with BPI alone.

Conclusions: Clinical services need to provide an integrated treatment approach for AUD which is comorbid with BPI. Stigma, interventional nihilism or self-medication may explain why patients with BPI+AUD appear to have been admitted less often to hospital. Early intervention and suicide prevention initiatives should be targeted at young men with BPI plus comorbid AUD.

THE BEST PRACTICE TARIFF AND HIP FRACTURES: HOW CAN NORTHERN IRELAND KEEP UP?

Murphy L, McKenna S, Shirley D.

Current hip fractures guidelines recommend surgery within 36 hours of admission. The 2011 National Hip Fracture Database (NHFD) report shows our institute has the fewest patients meeting this target (9%). Northern Ireland's exclusion from the "Best Practice Tariff" means no incentive-led treatment or prioritisation of hip fracture patients. We performed a systematic review of post-operative results to highlight deficiencies in delivery of patient care. We reviewed 702 patients admitted between September 2009 and April 2012. Patients were prospectively identified and added to our fracture outcome and research database (FORD). Results were compared to national average values from the NHFD. 16.7% of patients met the 36-hour target to theatre compared to the UK average of 66%. 81.7% underwent a pre-operative orthogeriatric review. The main reasons for surgical delay were inadequate theatre space (58%) and medically unfit patients (29%). After exclusion of medically unfit patients, medically fit patients were divided into delayed surgery and not delayed categories. Medically fit patients who had delayed surgery had inferior outcomes- longer hospital stay and higher mortality as an inpatient and at 30 days. Without a change in funding, Northern Ireland will struggle to compete with the UK mainland and decrease mortality in this patient group.

IS THE PROFILE OF NECROTISING FASCIITIS CHANGING IN NORTHERN IRELAND? A SINGLE CENTRE 6-YEAR EXPERIENCE, RESULTS AND ANALYSIS

Hodgins N, Damkat-Thomas L, Shamsian N, Yew P, Lewis H, Khan K.

Necrotising Fasciitis is a destructive infection of the skin and soft tissues, associated with significant mortality and morbidity. Survival from the condition necessitates patient referral to plastic surgery units for reconstructive procedures. We selected all cases referred to the regional plastic surgery service in Belfast over the last 6 years. We identified 46 referred patients (25 male: 21 female) and performed a retrospective case note review. The mean patient age was 59.4 years. Risk factors identified were diabetes, smoking, obesity, and immunocompromise. The most frequently affected anatomical site was the lower limb in 16 cases (35%). Infections contributed to 1555 hospital bed days with a median hospital stay per patient of 33.8 days. Necrotising fasciitis cases in Northern Ireland have been steadily increasing over the last 6 years reaching a peak in 2012. The majority are type 1 polymicrobial cases (50%). However, we observed a significant increase in type 2 Group A streptococcal infections over the timescale studied. The overall mortality rate was 28%. This is the first study from Northern Ireland, and one of the largest from the UK in the last 10 years, investigating the epidemiological features of necrotising fasciitis. It has identified a causative microbiology pool, along with changing bacterial trends that validate our current antibiotic policy. Mortality rates are consistent with those published from the rest of the UK.

THE OUTCOME OF PRECONCEPTUAL COUNSELLING IN WOMEN WITH EPILEPSY

Campbell E, Irwin B, Cooke I, Hunt S, Craig J, Cooke I, Morrow J.

Background: Preconception counselling (PC) to optimise seizure control and antiepileptic drug (AED) regimen is recommended as routine practice for women with epilepsy who are considering pregnancy. PC often takes place during routine outpatient clinic appointments, and previous studies have shown that information given in this context is often not retained.

Methods: Retrospective study of the outcome of PC in women attending our PC clinic over a ten-year period from 2003 to 2013. Comparison made to a cohort of pregnant women with epilepsy attending our Joint Epilepsy Obstetric Clinic from 2011-2012.

Results: A total of 122 women attended for preconception counselling. Overall, 74% of women attending for PC decided to continue to pregnancy without any change to their previous AED regimen. More women taking valproate, either in monotherapy or as part of a polytherapy regimen, made changes to their AED regimen following counselling than those on other drugs (42.8% compared to 4.9% for

monotherapy exposures, $p=0.0001$ and 70% compared to 28.6% for polytherapy, $p=0.03$). Of those attempting to change from valproate regimens, women taking valproate as part of a polytherapy regimen were more likely achieve a sustained change than those on valproate monotherapy (85.7% compared to 50% on monotherapy). Pregnancy was subsequently recorded in 84 women. Rates of preconceptional folic acid consumption varied between the groups who had attended PC clinic and those who had not. More pregnant women who had attended PC clinic took high dose folic acid preconceptionally (82.1%) compared to those attending neurology clinics (38.7%, $p<0.0001$) or attending a non-neurologist (35.3%, $p=0.0003$) and fewer abruptly withdrew AED treatment in the first trimester (1.2%) compared to those attending neurology clinics (7.5%, $p=0.07$) or attending a non-neurologist (11.8%, $p=0.07$).

Conclusion: In women attending for preconceptional counselling taking valproate, only 23.8% of those on valproate monotherapy and 60% of those of valproate polytherapy successfully changed to another AED prior to attempting to conceive. The higher rate of preconceptional folic acid intake and lower rate of abrupt AED withdrawal in pregnant women who attended dedicated preconceptional counselling clinic suggest that optimal planning of pregnancy and time dedicated to preconceptional counselling may increase the amount of information that is retained by women and improve pregnancy outcomes.

MATERNAL MORTALITY IN A RURAL HOSPITAL IN ETHIOPIA

McCauley M.

Aim: To assess the incidence and to circumstances associated with maternal mortality.

Method: Labour ward registration book was used to obtain details of patients who had died over the past 20 months. Medical records were then reviewed retrospectively.

Results: A total 48 patients were identified. Mean age was 25, and mean parity P1. 36% of patients self referred, 25% were referred from a health centre and 25% were referred from another hospital. Only 10% received antenatal care. The causes of death were severe eclampsia 32%; uterine rupture 28%; haemorrhage 24%; sepsis 10% and anaesthetic complications 6%. 75% of neonates were stillborn. 21% were comatose on arrival to hospital and died shortly afterwards. 11% died post operatively after surgery for ruptured uterus. On review only 14% of deaths may have been preventable with better inpatient management. Only 32% of patients had a discharge or death summary documented.

Discussion: The incidence of maternal mortality in Yirgalem was 1 in 67. This small study demonstrates that mothers in Ethiopia are still dying needlessly. There is an ongoing urgent effort required to reduce this unacceptably high incidence.

MOBILE PHONES IN CLINICAL PRACTICE: REDUCING THE RISK OF BACTERIAL

CONTAMINATION

Mark D, Leonard C, Breen H, Graydon R, O’Gorman C, Kirk S.

Mobile phones have become increasingly integrated into the practice of doctors and allied medical professions. Recent studies suggest they represent reservoirs for pathogens with potential to cause nosocomial infections. We aimed to investigate the level of contamination on phones used on surgical wards and identify strategies for their safe use. The phones of 50 members of the surgical multidisciplinary team were swabbed using a standardized technique by two trained investigators. The samples streaked out using an automated specimen inoculator onto two types of culture media (Columbia blood agar and MacConkey agar). Colonies were identified and counted by a single trained investigator in a blinded fashion. Simultaneously a questionnaire investigating usage levels of phones was given to 150 healthcare workers. 60% of individuals sampled had some form of contaminant isolated from their phone. 31 (62%) of phones had only 3 colonies or less isolated on medium. No nosocomial bacterial contamination or drug resistant isolates were identified. Touch screen smart phones may be used safely in a clinical environment in the setting of effective adherence to hand hygiene policies.

‘VULVAL ITCH’ – ARE WE ONLY SCRATCHING THE SURFACE?

Blayney GV, Hardy CL.

Background: Lichen sclerosus (LS) is an autoimmune, inflammatory dermatosis with incidence quoted as 1:300-1:1000 and carrying a 2-4% lifetime risk of developing invasive vulval cancer. Appropriate management may reduce this risk. We audited the management of patients with biopsy-confirmed LS, against RCOG Green Top Guideline No 58.

Methods: A list of patients with biopsy-confirmed LS during 2012 was obtained from our Trust histopathology database. A proforma was devised and case notes reviewed.

Results: 23 dermatological and gynaecological patients were identified. In 3 cases, the notes were unobtainable. All were post-menopausal and aged 53-84 years. In over 60% of cases, there was no attempt to explore a wider relevant history including enquiry into incontinence or personal or family history of autoimmune or atopic conditions. Examination appeared limited and was poorly documented with only dermatologists achieving best practice through considering systemic examination. The decision to biopsy was usually taken at presentation (55%), the main indication being uncertain diagnosis (60%). Whilst recognised as safe and appropriate, only 35% had an outpatient biopsy. Following diagnosis, 10% were investigated for other autoimmune disorders and 25% were advised regarding general vulval skin care. Only 45% were prescribed ultra-potent steroids, 44% of whom were treated with the recommended regimen and appropriately instructed regarding use. In 25%, there

was no communication of diagnosis, appropriate treatment or review to the patient or GP. Only 25% of patients were given an information leaflet and 20%, specifically informed regarding the risk of malignancy and the importance of self-surveillance.

Conclusion: This audit highlights that the management of LS, a pre-malignant condition, is consistently falling below recommended practice. Continued education and the use of a proforma to guide management may significantly improve practice and potentially minimise disease progression.

TRANSARTERIAL CHEMOEMBOLISATION FOR THE TREATMENT OF HEPATOCELLULAR CANCER IN NORTHERN IRELAND: OUTCOMES FROM A REGIONAL REFERRAL CENTRE

Stratton S, Bhat S, Cash J, Cadden I, Kennedy P, Ellis P, Collins A, Dargin A, McDougall N.

Background: Transarterial chemoembolisation (TACE) is used to palliate patients with inoperable hepatocellular cancer (HCC) and as a holding procedure prior to transplantation. All TACE therapy in Northern Ireland is delivered by a single centre.

Aims: To determine outcomes for patients treated with TACE for HCC since 2006.

Methods: Patients with HCC diagnosed between 1 Jan 2006 and 31 Dec 2011 who underwent TACE therapy were identified. Relevant premorbid clinical information (UKELD, MELD, Childs-Pugh (CP) stage) was calculated. NI cancer registry database was used for mortality data.

Results: 75 patients (83% male, mean age 67yrs) with HCC had their first TACE during study period, rising from 5 in 2006 to 18 in 2011.

Confirmed causes of cirrhosis included alcoholic liver disease, hepatitis B and C, haemochromatosis, primary biliary cirrhosis, and NASH. 49 patients were CP stage A, 24 were CP B and 1 CP C. Mean MELD score was 9.5 (range 6-20) and UKELD 48.5 (range 42-55).

Mortality was 4% at 30 days, 39% at 1yr and 68.5% at 2yrs. Nine patients had TACE as a holding measure pre-transplantation. Survival was influenced by age and gender.

Conclusions: The number of new patients receiving TACE for HCC in NI is rising. One year survival rate is 61%.

SPONTANEOUS HYPOGLYCAEMIA IN A NON-DIABETIC PATIENT WITH INSULIN ANTIBODIES

McQuillan LM, Graham UM, Lindsay JR.

A 58 year old non-diabetic caucasian man was admitted with a capillary glucose of 1.9mmol/l following an episode of confusion and disorientation. During his admission he had frequent episodes of nocturnal and early morning hypoglycaemia with capillary glucose <3.0mmol/l. After 21 hours of supervised fasting he was symptomatic with

plasma glucose 2.3mmol/l, insulin >1000mU/l and C-peptide 19.6ug/l. Sulphonylurea screen was negative. Given the magnitude of serum insulin, insulin antibodies were measured and were positive. Serum insulin was corrected for the presence of antibodies using PEG precipitation yet remained elevated. CT imaging of pancreas was normal. Endoscopic ultrasound demonstrated a hyper-echoic abnormality in the tail of the pancreas measuring 13x11mm. He subsequently attended for calcium stimulated venous sampling which demonstrated high insulin production throughout the gland with no localisation. The patient started carbohydrate supplementation and 5mg daily prednisolone with resolution of hypoglycaemia over 8 weeks. Insulin autoimmune hypoglycaemia is a rare condition characterised by extremely high levels of insulin in the presence of anti-insulin antibodies. It is the third leading cause of hypoglycemia in Japan, but has rarely been described in the non-Asian population. Making the correct diagnosis is important to avoid an unnecessary pancreatic surgical procedure on a hypoglycemic patient.

CASTLEMAN DISEASE

Warnock M, Campbell B, Macauley G, Hegarty S.

A previously well 27-year-old female presented with three-month history of fatigue and weight loss. She did not report any other symptoms and there was no significant recent travel history. Clinically, there were no objective signs and basic investigations revealed a microcytic anaemia with raised inflammatory markers. HIV, hepatitis virology and liver specific antibodies were all negative. An OGD plus biopsies were normal. A CT abdomen revealed a 5cm soft tissue mass in the left side of the abdomen, separate from the pancreas and adjacent to the left kidney. At this point differential diagnoses included gastrointestinal stromal tumour, lymphoma, desmoid tumour and schwannoma. She proceeded to a laparotomy where a smooth walled lesion was resected from the proximal small bowel mesentery. Her postoperative recovery was unremarkable. The histology was returned as fitting a diagnosis of Castleman disease (CD). CD is a rare non-clonal lymphoproliferative disorder of unknown aetiology. There have been less than 2000 cases reported in the literature. Mesenteric CD is very rare event with only 43 cases reported in the English literature. Awareness of CD is important because the disease is potentially life threatening, is exceptionally rare and is incompletely understood.

COST IMPLICATIONS OF UNNECESSARY COAGULATIONS SCREEN IN SURGICAL PATIENTS

Spence RAJ, Gordon E, McCrossan L, Boyd K, Weir CD.

Aim: Coagulation screens in surgical patients are routinely requested, often inappropriately. A coagulation screen costs £4.81, and often does not alter management. We performed four prospective audits (with audit cycle closed twice) of surgical inpatients in a district general hospital, comparing to Trust and NICE guidelines, to establish if coagulation screen requests were appropriate and identify cost implications.

Methods: All coagulation screen requests in surgical inpatients over two to five week periods were analysed and compared to Trust and NICE Guidelines. Medical notes and laboratory results were reviewed. This was repeated four times over a 3-year period (14 weeks in total).

Results: 313 coagulation screen requests were made over the four audit periods. Only 38% (119/313) requests were indicated as per guidelines. Inappropriate screens were typically requested for no apparent reason (29%), or unnecessary pre-operative, pre-procedure requests (28%), of the total 194 inappropriate requests. Only 3 unexpected coagulopathies were found. Over the four audit periods, total cost of inappropriate screens was £933.14

Conclusions: Despite guidelines, there were a large number of unnecessary coagulation screens performed. Extrapolating our data over the 3-year period, £10,405.20 is spent on inappropriate screens.

DOSE-RESPONSE EFFECT OF FRUIT AND VEGETABLES ON INSULIN RESISTANCE IN OVERWEIGHT HEALTHY PEOPLE AT HIGH RISK OF CARDIOVASCULAR DISEASE: A RANDOMISED CONTROLLED TRIAL

Wallace IR, McEvoy CT, Hunter SJ, Hamill LL, Ennis CN, Woodside JV, Bell PM, Young IS, McKinley MC.

Whole diet observational studies suggest a beneficial effect on insulin resistance of diets rich in fruit and vegetables (FV). We examined the dose-response effect of FV consumption on insulin resistance in 105 overweight, non-diabetic individuals with no history of cardiovascular disease. After a 4 week wash-out diet of 1-2 portions FV per day, subjects were randomised to consume 1-2, 4 or 7 or more portions FV daily for 12 weeks. Insulin resistance was assessed pre and post intervention using a 2 step hyperinsulinemic euglycemic clamp. Between group comparisons of change were made with one-way ANOVA. Eighty-nine subjects completed the protocol; 28 (1-2FV), 29 (4FV) and 32 (7FV) attained a self-reported intake of 1.8, 3.8 and 7.0 portions per day ($p < 0.001$) per group. Weight was maintained ($p = 0.77$). Mean change in glucose infusion rate was 3.17, -2.14 and 5.40 $\mu\text{mol/kg/min}$ ($p = 0.215$). No significant difference was found between groups in measures of whole-body, peripheral or hepatic insulin resistance. Increasing consumption of FV has no effect on insulin resistance in overweight individuals at high risk of cardiovascular disease in the absence of weight loss. However increasing FV intake as part of a calorie restricted diet may have beneficial effects.

NO ASSOCIATION BETWEEN VITAMIN D AND INSULIN RESISTANCE IN OVERWEIGHT HEALTHY PEOPLE AT HIGH RISK OF CARDIOVASCULAR DISEASE

Wallace IR, McEvoy CT, Hamill LL, Ennis CN, Bell PM, Hunter SJ, Woodside JV, Young IS, McKinley MC.

Observational studies suggest reduced vitamin D levels

are associated with an increased incidence of type 2 diabetes mellitus (DM). We examined the relationship with insulin resistance (assessed using a two-step euglycaemic hyperinsulinaemic clamp) in 92 overweight, non-diabetic individuals with no history of cardiovascular disease - mean age 56 years (range 40 -77 years), 64% males, 36% females, body mass index 30.9 kg/m² (range 26.4 – 36.9 kg/m²), fasting plasma glucose 5.8 mmol/L (range 4.9 – 7.0 mmol/L). Vitamin D was measured using an ultra performance liquid chromatography technique (UPLC) with tandem mass spectrometry. Statistical analysis was performed using Pearson's correlation coefficients and partial correlation. Mean total vitamin D concentration was 32.2 nmol/L. Pearson's correlation coefficients for vitamin D and GIR step 1 were -0.003 (p=0.98), GIR step 2 -0.036 (p=0.73) and HOMA-IR -0.163 (p=0.13). Partial correlation analysis did not elicit any significant correlations after correction for potential anthropometric, seasonal or gender confounders. We demonstrate no association between vitamin D and measures of insulin resistance in healthy overweight individuals at high risk of cardiovascular disease. We suggest that if vitamin D is associated with a reduced risk of DM, this may be due to effects on the beta-cell rather than on insulin resistance.

OUTCOMES OF 216 TRAUMATIC BRAIN INJURY (TBI) PATIENTS REQUIRING ADMISSION IN A DISTRICT GENERAL HOSPITAL (DGH)

Spence A, Finnegan S, Flannery T, Harty J.

Introduction: Management of TBI in the DGH is based on national guidelines. There is little in the literature on the outcome of such patients.

Methods: Case notes, imaging and follow-up of 216 TBI patients admitted during one year were reviewed.

Results: The majority of patients admitted (median age: 50 years) were male (81%) and were assessed by trainee physicians; with 79% admitted between 5pm and 9am. 86 patients (41%) had evidence of alcohol consumption, 60 (29%) had decreased consciousness, 15 had dangerous mechanism of injury. 33 patients (22%) demonstrated an abnormality on initial CT brain including cerebral contusions (n=21), skull fractures (n=20), subdural (n=15), intraparenchymal (n=13), subarachnoid (n=6) and extradural haemorrhages (n=3). Four patients died shortly after initial presentation to the DGH due to a non-survivable TBI. Neurosurgical advice was sought on 19 patients - 13 were transferred of whom six required surgery; three eventually died. Glasgow Outcome Score (GOS) of the majority of available cases at last review was 5; a small number requiring minimal assistance (GOS=4, n=3); two patients had permanent disability (GOS=3, n=2).

Conclusions: Head injuries are common in a DGH and, while poor outcomes are rare, adherence to guidelines is essential to ensure optimal patient management.

LOWERING BLOOD TRANSFUSION IN CARDIAC SURGERY – RAP IS CHEAP AND EFFECTIVE

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Introduction: Locally, Cardiac Surgery consumes 2000 units of blood each year.¹ Using Intraoperative cardiopulmonary bypass results in haemodilution and relative anaemia. Blood transfusion rate for the most commonly performed procedure, CABG is 59%. Resternotomy for bleeding occurs at a rate of 4.9% so we can assume that transfusion is occurring outside of post-operative blood loss. Red cell transfusion has adverse post-operative outcomes with a doubling of 5 year mortality (16% vs 7%).² We established national trends in blood conservation and reviewed Retrograde Autologous Prime (RAP) of the bypass circuit as a method of blood conservation.

Methodology: An online survey was carried out across all UK and Ireland units. This was correlated with a local audit of patients receiving RAP versus no RAP. Forty-six patients undergoing cardiac surgery were prospectively studied.

Results: A response rate was seen of 88.6% to the questionnaire. The most common rate of blood transfusion reported was 25-50% with RAP used as a blood conservation method. In our cohort, the addition of RAP led to a 50% reduction in the blood transfusion rate (60.9% to 30.4%).

Conclusions: The method of RAP effectively reduces blood transfusion in this small study and we suggest it as part of patient blood management.

DEFINING THE ROLE OF HER1 IN INVASION AND METASTASIS USING A THREE DIMENSIONAL MODEL OF BREAST CANCER

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Breast cancer is the most common cancer in the UK. Associated mortality is almost exclusively as a result of its ability to metastasise to and disrupt distant viscera. In order to improve survival rates in breast cancer, a better understanding of the mechanisms by which cancer disseminates is required. Here we describe a 3D assay which supports proliferation and invasion of primary breast cancer biopsies. Using real time video microscopy and histopathological techniques we identify a role for HER1 in the transformation of ER+ cancer cells into an ER- phenotype. Furthermore, activation of the HER1 receptor may result in epithelial cells developing mesenchymal characteristics along with increasingly invasive behaviour. Correlation with resected breast cancer specimens identified higher levels of HER1 expression alongside a reduction in ER expression over time in patients with recurrent breast cancer. Whilst further investigation is required in both the laboratory and clinical setting, these experiments indicate there may be a role for HER1 antagonists in the setting of ER+ breast cancer to reduce the rate of conversion to a more invasive basal phenotype and systemic dissemination.