



RMS National Conference 2017

Abstracts

1. Podocyte Loss in Glomerular Disease: the role of YAP and Dendrin

Cameron Bell, David Harrison

Background: Podocytes are specialised and complex renal glomerular cells essential for normal kidney function, but are also targets in the pathogenesis of glomerular disease. Although mechanisms are unknown, podocyte injury leads to detachment from the glomerulus and proteins including YAP and Dendrin have been recently implicated. Dendrin translocates to the nucleus in injury where it promotes apoptosis, however YAP, a pro-survival transcriptional co-activator, antagonises Dendrin signalling. This study aims to improve the understanding of YAP and Dendrin signalling in common glomerular diseases using histological specimens and in vitro studies of podocyte injury. To inform future research and clinical applications the presence of podocytes in urine was also assessed.

Methods: Location of YAP and Dendrin, by immunofluorescence, was described in tissue sections of healthy kidney, Focal Segmental Glomerulosclerosis, Membranous Nephropathy and Diabetic Nephropathy. A characterised human podocyte cell line was exposed to three injury models: puromycin aminonucleoside, hyperglycaemia and hypoxia. Following injury, expression of YAP and Dendrin was studied in detached and in situ cells. Cells isolated from urine were characterised with urothelial and podocyte markers.

Results: In Diabetic Nephropathy, translocation of Dendrin to the podocyte nucleus was observed histologically. In vivo, podocyte injury resulted in translocation of Dendrin to the nucleus and YAP to the cytoplasm – which was enhanced in detached cells. Detached podocytes did not demonstrate apoptotic features and were viable on re-culture. Podocytes were not detected in urine of healthy volunteers. This was not assessed in disease because of contamination.

Conclusion: Podocyte loss does not appear to be due to apoptosis and is associated with YAP and Dendrin translocation. Demonstrating nuclear expression of Dendrin in Diabetic Nephropathy is a novel finding. Our data suggests that loss of nuclear YAP triggers podocyte detachment through uninhibited Dendrin signalling and that podocytes are absent or atypical in urine of healthy volunteers.

2. How do medical students respond to high-stake examinations?

Rebecca Lumley

Background: Examination anxiety in medical students is well documented in the literature. Studies have shown that they suffer from significantly higher levels of stress and mental health problems in comparison to the general population. The aim of this study was to explore how medical students respond to high-stake examinations and what coping mechanisms they use to help them during the examination period. I also aimed to explore their thoughts on the support that would be useful for them and if any changes could be made in the MBChB in order to decrease their anxiety around examinations.

Methods: Nine semi-structured interviews were carried out with students across years 2-5 of the medical school. Interviews focused on student's experiences of taking high-stake examinations, their coping mechanisms and the support they would consider useful around the time of high-stake examinations. A thematic analysis was then carried out.

Results: Most of the participants reported high levels of anxiety around the time of high-stake examinations, including both psychological and physical manifestations. There were a number of different factors that contributed towards their anxiety, including interactions with other medical students, grading systems, the perceived consequences of failing and the unique format of the OSCE examination. Participants employed a variety of coping strategies to manage their anxiety, however did not access available supports.



Conclusion: Medical students experience high levels of anxiety in association with high-stake examinations, however are reluctant to seek help for their anxiety out of fear of the repercussions for their studies. Medical schools should aim to reduce the stigma associated with mental illness and reassure students that few conditions will affect their progression in the course. A switch to pass/fail grading and an introduction of OSCEs into earlier years of the MBChB programme should also be considered.

3. Characterisation of mitochondrial respiratory function in primary gut tissue in the *mdr1a*^{-/-} mouse model of colitis

Etienne Chew, Roderick Carter, Nicholas Morton, Gwo-tzer Ho

Background: Mitochondrial dysfunction and intestinal epithelial energy deficiency have been purported to contribute to the development of inflammatory bowel disease (IBD). However, contemporary findings in this area have only been based on correlative data (e.g. protein expressions of the electron transport chain). The use of Seahorse XF technology to provide a real-time and direct characterisation of cellular bioenergetics has been successful in several tissue types. However, it has not been utilised with primary intestinal tissue. We thus aimed to develop a novel method of characterising mitochondrial respiration and glycolytic function of such tissue via this technology, so as to provide the first real-time data of cellular bioenergetics in primary intestinal tissue.

Methodology: Ileums and proximal colons of wild-type and *mdr1a*^{-/-} colitis mice were dissected and mounted onto a Seahorse XF24 islet capture microplate for analysis in the Seahorse XF Analyser. Cellular bioenergetic profiles from the analysis were used to interpret mitochondrial respiration and glycolytic function. In order to develop the technique for characterisation, we also optimised intestinal tissue size and drug doses used for the analyses.

Results: We have found a higher level of glycolysis in the colon compared to the ileum. However, this

difference cannot be explained by the contribution of colonic microbiota as antibiotic treatment did not influence glycolysis. We have also observed that glycolysis was greater in inflamed colon compared to healthy colon, which mirrors current understanding of increased glycolytic enzymes in IBD due to tissue hypoxia.

Conclusion: We have established a novel method to assess cellular bioenergetics in primary murine gut explants and have also identified hitherto unknown findings. Our study provides early data supporting the hypothesis of bioenergetic impairment in mouse colitis, and our method will allow further exploration into gut energy profiles in mouse colitis in vivo and primary human intestinal tissue.

4. Improving the Use of the Surgical Safety Checklist in Gynaecological Theatre

Roisin Mulholland

Background: The surgical safety checklist is an important aspect of peri-operative care that aims to improve patient outcomes and teamwork in theatre. This project aimed to audit the compliance of two elective gynaecology theatres at the Royal Infirmary of Glasgow with the “sign in” and “time out” aspects of the surgical safety checklist against gold standards. In addition, it was proposed a “sign out” would be introduced to improve use of this checklist.

Methods: Two cycles of direct assessment of the sign in and time out were conducted using gold standard audit tools with a four-week education period in between. Following this, education, informal feedback and a “phase in” period were used to help introduce the sign out.

Results: Both theatres improved in compliance with gold standards in both the sign in and time out: theatre 4 improved compliance by 7.6% in the sign in and 6.6% in the time out; theatre 5 improved compliance by 0.2% in the sign in and 6.6% in the time out. The introduction of the sign out was met with some resistance and further steps should be taken in order to cement its practice within the theatres.



Conclusions: The checklist was being used appropriately but the introduction of “checklist champions” could be used to overcome the resistance experienced to the sign out and improve the use of the checklist in general to allow collection of longitudinal audit data.

5. Cardiothoracic Consent: A Study into the Process of Gaining Appropriate Consent for Heart Valve and Heart Bypass Surgery

Madeleine CA Randle, Oliver R Vick, Rachel J George, Zheyang Khor, Max JM Jeffrey, Euan G Ballantyne, Sirajam M Chowdhury, George Y Duan

Background: Gaining informed consent is an integral part of enabling patients to come to educated and balanced decisions about their cardiac care. This study aims to evaluate this process in post-operative patients on a cardiothoracic ward, with particular attention to recollection of risks compared to what they were actually told by their surgeons.

Methods: Interviews were conducted in pairs with 30 post-operative patients. Standardised questionnaires containing open-ended and closed questions were used. Answers were compared with patient records to see whether discrepancies existed between patient recollection of risks and those they were informed of. Qualitative data concerning patients’ ideas about consent were gathered.

Results: An average of 48% of risks explained by surgeons were forgotten by patients, and a positive correlation was noticed between severity of risk and percentage of patients that recalled being told about it. A third of patients felt the decision-making process was entirely doctor-led; these patients rated their relationship with their surgeon at 8.3/10, higher than average.

Conclusion: The low recollection rate of risks calls into question the validity of consent, showing that information is not retained by patients both leading up to and following their surgery. It is concerning that patients rate their relationship with their surgeon

higher despite less patient involvement, potentially undermining their personal consent.

6. Clinical Gestalt – Is it better than a Triage Score?

Oliver Shipston-Sharman, Hannah Pert, Eilidh Clark, Mark Everton, Fergus Jones, Manveer Rahi, Natalie Bee, Tom Beattie, Lindsay Reid

Background: This winter has seen the lowest adherence to the target of 95% of patients to be seen within 4 hours in Accident and Emergency since it was introduced in June 2010. Delays can occur for many reasons, but delay in decision making is one factor amenable to change. Clinical Gestalt or “Gut feeling” is not formally recognised in triage systems. However, most clinicians are aware of that feeling and will act on it at times.

Methods: Between January and March 2015, triage data was gathered at the point of triage for a random sample of patients. A triage nurse, meanwhile, put a mark on a 10cm line to indicate how ill they believed the child was (0 = very well, 10 = very unwell). The distance from zero was measured and used as the “Gestalt.” Data was stored on a secure computer in Microsoft © Excel©. The Gestalt, Triage Score and Outcome were analysed using IBM SPSS Version 22©. All trauma patients were excluded.

Results: Data was gathered for 204 patients but 9 were excluded due to incomplete data, leaving 195 for analysis. The mean Gestalt scores for admission and discharge were 4.12 +/- 1.06 (95% CI 3.06 – 5.18) and 2.65 +/- 0.32 (95% CI 2.33 – 2.97) respectively. A ROC curve for clinical gestalt against outcome produced an area under the curve of 0.656. The optimal specificity and sensitivity values were 0.8 and 0.5 respectively at a Gestalt score of 2.25. As gestalt score increased, triage score decreased (i.e. urgency of intervention increased). The Spearman’s Rank Correlation Coefficient was -0.560 (p <0.01).

Conclusion: The data suggests that Gestalt could possibly play a role in clinical practice. If added to an



established triage score it could potentially increase the efficiency of triage and resource planning including admission planning/bed allocation.

7. Gross over-inflation of endotracheal tube cuffs: An audit of the monitoring and adequacy of endotracheal tube (ETT) cuff pressures following intubation in elective surgery

Lauren Brown, Laura Naumann, Scott Frazer

Background: It is recommended by the AAGBI that high-pressure inflation of ETT cuffs should be avoided, using cuff-manometers to achieve this. Pressures above 25mmH₂O are considered high, restricting tracheal blood flow, potentially resulting in injury, trachea-oesophageal fistula and sore throat. The aim of this audit was to assess whether ETT cuff pressures were within the recommended range and whether inflation using a minimum occlusive volume technique produced more suitable cuff pressures than in its absence.

Methods: 44 patients were sampled over a 6-week period. ETT cuff pressures were measured 5 minutes following intubation with a hand-held manometer. Data collection included: type of ETT, inflation methods used, start/end cuff pressures and experience of sore throat. Single blinding of data collection was utilised in order to minimise change of practice. Additional variables affecting airway pressure were recorded to exclude confounding factors. Data was analysed and statistical tests performed using GraphPad Prism™ software.

Results: No cases routinely used a cuff-manometer to monitor ETT cuff pressure. The mean ETT-cuff pressure was 56.17mmH₂O. Cuff pressures were significantly lower with MOV assessment guided inflation, in comparison to lack of MOV assessment (95% CI 6.619-48.44, $p=0.0112$), though pressures were still high. After controlling for pre-operative sore throat, there was no significant difference in cuff pressures between those who reported or denied sore throat (95% CI -32.82-15.10, $p=0.4575$).

Conclusion: Recommendations include improvement in provision of cuff manometers and education on the importance of acceptable ETT cuff pressures. Mean cuff pressures were over double the recommended limit; MOV yielded lower cuff pressures, thus may be advantageous in the absence of a manometer. ETT cuff pressure had no relation to sore throat; determination of the relationship to other outcome measures may be useful.

8. Assessing the effect of short sharp bursts of physical activity on the attitudes of children from Primary one classes

Millie Wood, Graham Mackenzie

Background: Physical activity levels are declining amongst school-aged children and childhood obesity rates are rising. Government policies and recommendations have been published over recent years, providing physical activity guidelines for 5-18 year olds. School has been identified as a unique location to employ exercise interventions to establish healthy habits from an early age. This project aims to critically assess the impact of daily short bursts of physical activity on Primary One students' attitudes towards exercise.

Methods: Primary One pupils in Liberton Primary School, Edinburgh were asked a simple Likert scale question. This was repeated 6 weeks after a daily physical activity intervention. Pupil's baseline and follow-up scores were matched and recorded. A questionnaire was sent to parents seeking both qualitative and quantitative responses. Parents and children were matched to determine any relationships between their attitudes.

Results: The sample consisted of 71 Primary One pupils (31girls and 40 boys). A paired samples t-test compared baseline and follow-up attitudes. The intervention positively affected children's attitudes towards exercise: statistically significant changes for boys but not girls.

Conclusion: A daily burst of physical activity significantly affected Primary One children's attitudes



towards exercise. The intervention had greatest effect on boys suggesting that girls of this age may benefit more from alternative exercises. Children's attitudes and parental opinions were consistent with recent evidence recommending daily physical activity for Primary One children. The intervention's success suggest it should be offered to other classes and schools, aiming to positively affect children's attitudes towards exercise and promote healthy lifestyles.

9. The development, evaluation, and perceived barriers to use of computer-assisted learning (CAL) in undergraduate endocrine medical education

Chris Graham, Rebecca M Reynolds, Ruth Andrew, Michael Ross, Steven D Morley

Background: Pedagogical research suggests that computer-assisted learning (CAL) empowers students by allowing control over learning, simplifying visually intensive subjects and providing an additional route to achieving curriculum-defined learning outcomes (LOs). A suite of staff-authored endocrine CAL packages has been well received by University of Edinburgh medical students. To further enhance understanding of endocrine thyroid function and dysfunction, a student-authored thyroid CAL package was developed under the supervision of faculty staff.

Methods: Thyroid CAL content was synthesised from core endocrine course materials, including lectures, problem-based learning, tutorials, and recommended textbooks, to conform to University of Edinburgh MBChB and UK Society for Endocrinology LOs. To stimulate user concentration and promote self-assessment, questions on subject content were interspersed throughout the CAL. Animations were designed by the student author (CG), and professionally produced. Student evaluation of endocrine CALs, including the thyroid CAL package, was sought via an on-line questionnaire comprising Likert scale questions and free text responses exploring perceptions of and perceived barriers to CAL use. Ethical approval was granted by the University of Edinburgh MVMSEC Educational

Research Ethics Committee. Both the endocrine CALs and the questionnaire were hosted on Edinburgh Medical School's intranet.

Results: All (N=213) second-year medical students were invited to participate of which 45 (21%) completed the questionnaire. 32 respondents (71%) reported using one or more endocrine CAL packages. 24 (53%) reported using the student-authored thyroid CAL, all rating it as either 'good' or 'excellent'. Students commented that the student-authored thyroid CAL was logically organised and seemed to help them to achieve the LOs. The main perceived barrier to CAL use was pressure on time in the curriculum for different modes of learning.

Conclusion: Student-authored CAL was well received by students. We are now using thyroid CAL package as a template to further develop student-authored endocrine CAL.

10. Inhibitory Anti-Fungal Antibodies Associated with Crohn's Disease and Ulcerative Colitis

Rebecca J Brown, Timothy J Wells, Ian R Henderson

Background: Genetic mutations of the immune system are considered to be the cause of Crohn's disease (CD) and ulcerative colitis (UC) as they leave patients susceptible to various environmental factors. Abnormal colonisation of the gut by yeast may induce a pathological immune response which contributes to the onset of these inflammatory bowel diseases (IBD). Anti-*Saccharomyces cerevisiae* antibodies are heavily associated with IBD, but the exact mechanism remains unclear. Raised IgG has been associated with inhibition of phagocytosis in IBD, and high titres of IgG2 specifically can inhibit killing of some bacteria. In this study we establish whether titres of IgG2 affect phagocytosis of yeast by a similar mechanism in IBD.

Methods: We extracted mannan from 4 strains of yeast and compared titres of antibodies against it in both patient and healthy control sera. We used a number of immunoassays including enzyme linked



immunosorbent assays (ELISAs) and serum killing assays to attempt to determine if phagocytosis was affected. We visualised the binding of IgG2 to the surface of live yeast using immunofluorescence.

Results: We found that significantly more patients had high titres of IgG2 than healthy controls, data that was not confounded by acute infection as there was no correlation between titres of IgG2 and IgG. Mannan from *S. cerevisiae* was shown to specifically bind IgG2. We suggested that any inhibition of phagocytosis would be mediated by aberrant surface binding of IgG2 during opsonisation, an integral part of the phagocytic process. Higher surface binding of IgG2 to live yeast was seen in patient sera compared with healthy controls but we were unsuccessful in quantifying this using flow cytometry.

Conclusion: IBD patients have higher titres of anti-yeast IgG2 than healthy controls, suggesting they could play a part in the disease process. Further research is needed to establish whether this IgG2 impedes phagocytosis in CD and UC.

11. Does the CIWA-Ar tool Reduce the Length of Stay and Adverse Events in Patients Withdrawing from Alcohol in an Acute Medical Unit?

Ruben Perumal, Claire Gordon

Background: Without access to alcohol while hospitalised for other comorbidities, patients experiencing withdrawal symptoms are given benzodiazepines on a fixed-schedule, risking over-sedation. The Clinical Institute Withdrawal Assessment for Alcohol, revised (CIWA-Ar) protocol uses symptom-triggered dosing to prevent this. This study investigates whether using the CIWA-Ar tool may be more effective in reducing the length of stay and adverse events in these patients.

Methods: A retrospective cross-sectional audit was done on 228 patient episodes presenting to the Acute Medical Unit at the Western General Hospital, Edinburgh, United Kingdom in a six-month period between April and September 2016 with various

comorbidities and history of alcohol dependence. They were divided into two groups based on whether the CIWA-Ar tool was used on them: 54 patient episodes in the CIWA group and 174 patient episodes in the non-CIWA group. The main end-points measured were the length of their hospitalisation and any adverse events they developed. Staff feedback on their use of the tool was also gathered with a validated questionnaire.

Results: The CIWA group were 1.2 times more likely to be hospitalised for more than 7 days than the non-CIWA group (but $p > 0.05$). The CIWA group were 2.5 times more likely to have adverse events than the non-CIWA group ($p < 0.05$) with shaking, shivering and sweating being 4.2 times more likely in the CIWA group ($p < 0.05$), but confusion and delirium was less likely (although $p > 0.05$). The CIWA patients were more likely to have a complete history taken as well as given Pabrinex® and diazepam compared to non-CIWA patients ($p < 0.05$). The majority of staff found the tool easy to use and was beneficial to patients but recognised that more training was necessary.

Conclusion: The CIWA-Ar tool does not decrease the length of stay and adverse events in patients withdrawing from alcohol in an Acute Medical Unit.

12. Understanding the development of flexible swimming patterns in *Xenopus* tadpoles

David Henshall, Hongyan Zhang

Background: Animals' ability to flexibly control the speed of their own rhythmic movements is essential for expression of their full behavioural repertoire and often their survival, paramount for pursuing prey or evading predators. In tadpoles of the African clawed frog, *Xenopus laevis*, this ability to flexibly control swimming speed develops rapidly; by 72 hours post fertilisation (hpf). The spinal networks responsible for rhythmic locomotion, such as walking and swimming, are known as central pattern generators (CPG). Coordination of movements by these networks can occur without sensory, or even descending input from the brain. The mechanisms underlying the flexible control of swimming in *Xenopus* tadpoles remain



unknown, though those responsible are thought to be changes in the descending input from the brain or within the spinal CPG itself.

Methods: This project investigates whether flexible swimming patterns can be produced after (mid)-hindbrain lesion by *Xenopus* tadpoles at 72hpf, immobilised in α -bungarotoxin. Using ventral root recordings, the activity of populations of motoneurons were recorded 30 minutes before and after lesion, and their firing frequency used as a fictive correlate of swimming speed. Change in motoneuron burst frequency $>30\%$ was determined to constitute flexible swimming.

Results: Flexible swimming patterns could still be produced after lesion ($n= 3/20$ tadpoles); proving that flexible swimming can occur without descending input from higher brain centres.

Conclusions: Mechanisms underpinning flexible swimming can be accounted for by changes in the spinal networks. Future research will investigate changes in the CPG network and test their influence on the development of flexible swimming.

13.The impact of provider incentives on inequalities in sexual health management and outcomes in primary care in Yorkshire and the Humber

Jaime Bolzern, Tim Doran

Background: The Quality and Outcomes Framework (QOF) provides financial incentives to GPs. One target, CON003, describes the percentage of women prescribed emergency hormonal contraception (EHC) given information about long-acting reversible contraception (LARC). Examining relationships between deprivation and CON003 may provide intelligence concerning QOF and inequalities in sexual health.

Methods: We used QOF data and the Index of Multiple Deprivation 2015 (IMD2015) for Yorkshire and the Humber (Y&H) to retrospectively analyse

relationships between deprivation and CON003 performance; deprivation and exception reporting (an element of QOF which makes allowances when it is clinically inappropriate to fulfil a target); and deprivation and demand for EHC. We performed cross-sectional analysis for changes in EHC demand.

Results: We found no relationship between IMD2015 and CON003 achievement in 2014-15 (correlation $r = -0.06$) nor in 2013-14. CON003 performance was high, with mean achievement 94.2%. We found no relationship between area-level deprivation and exception reporting (correlation $r = +0.09$). Exception reporting was generally low. We found no relationship between deprivation and EHC demand in Y&H, neither in 2014-15 (correlation $r = +0.07$) nor in 2013-14.

Conclusion: CON003 was generally well-achieved, with no association between deprivation and performance, suggesting primary care in this area is effective and equitable. Similarly, we found no association between deprivation and exception reporting. Few patients were excluded, with exclusion levels no higher in practices in deprived areas. EHC demand can be viewed as a sexual health indicator, with higher rates of EHC use reflecting poorer population sexual health planning. Our finding of no linear relationship between EHC use and deprivation may suggest contraceptive access is unaffected by socioeconomic inequality. Further research could focus on other aspects of contraception provision, including LARC uptake.

14. How Inclusive is the UK healthcare system for transgender and/or non-binary people?

Eleanor Dow

Background: The transgender and/or non-binary community face significant health disparities in the UK, yet their experiences of the healthcare system are under-recorded. Furthermore, they are often excluded from a society that primarily organises itself using a binary gendered and cisnormative system. This study explores transgender and/or nonbinary people's



experiences of the healthcare system to identify ways to improve inclusivity.

Methods: A survey was created and distributed using email and social media correspondence with organisations involved in transgender and/or nonbinary healthcare, advocacy or support in the UK. Participants filled out the survey online anonymously, and it was made live for one month. Results and comments were collated, and a thematic analysis was carried out in order to identify common words or phrases, which were then ordered in frequency of the use of each theme and presented in Pareto Charts.

Results: 76 participants who identified as trans and/or nonbinary completed the survey which revealed that 81.6% of participants felt the UK healthcare system is not very or not at all inclusive, and gives evidence of transphobia and discrimination among healthcare professionals. Significant barriers to inclusivity were long waiting times, no nonbinary options on forms, and not enough healthcare professionals trained in trans and/or nonbinary health issues. Suggestions by participants to improve inclusivity include more education and training for healthcare professionals, reducing gendered paperwork and routinely asking patients preferred pronouns.

Conclusion: There is an urgent need for policy change within the UK healthcare system to improve access to healthcare for the transgender and/or non-binary community. There are several recommendations as to how to improve inclusivity from the results of this study which are important to consider implementing.

15. The impact of anaemia on Transplant-free survival in End-Stage Liver Cirrhosis

A Morgan, R Sinha, PC Hayes

Background: Anaemia, systemic inflammation and organ dysfunction are common amongst patients awaiting liver transplantation; however, their impact on survival is poorly understood. Mortality prediction systems, such as the Model for End-Stage Liver Disease (MELD) and United Kingdom Model for End-

Stage Liver Disease (UKELD), aim to identify patients with severe disease and allocate organs for transplantation appropriately. Additional blood markers, such as haemoglobin and the neutrophil-lymphocyte ratio (NLR), a marker of systemic inflammation, may add greater predictive value to these existing scoring systems. Survival in anaemic and non-anaemic patients was therefore investigated by determining association with key mortality predictors. Additionally, the investigation of anaemic patients was assessed for uniformity.

Methods: Biochemical and haematological data of patients listed for transplantation at the Scottish Liver Transplantation Unit in 2011 was retrospectively analysed using Cox regression and Kaplan Meier methods, verified using c-statistics. Simple mathematical methods were used to evaluate the consistency of investigation in patients with anaemia.

Results: 103 patients were eligible for inclusion, of which 77.7% were anaemic. Anaemia was associated with early mortality ($p=0.041$) and decreased transplant-free survival ($p=0.11$). Haemoglobin levels correlated significantly with NLR ($rs=-0.446$, $p=0.000$). Iron studies and endoscopy were undertaken in 85% and 80% of anaemic patients respectively, with two patients undergoing colonoscopy.

Conclusions: Anaemia is associated with poorer survival outcomes and, with NLR, may enhance mortality prediction systems. The disparity in the investigation of anaemic patients shows standardisation is required to ensure a consistent approach in patients. Further prospective studies in a larger cohort are needed to validate these findings, aiming to continually refine mortality prediction methods.



16. Road Traffic Collision Fatalities: A retrospective review of road traffic deaths in South-East Scotland between 2014 and 2015.

Andrew Sadler

Background: Road traffic collisions (RTCs) represent a major source of global trauma and death, and are underrepresented in current literature. This study aims to; identify trends in the demographic and location of fatal road traffic collisions on public roads in South East Scotland; establish common causes of death and injury patterns, which may prove useful to the Edinburgh Forensic Pathology Unit in dealing with future cases and to understand the role of positive toxicology results with relation to the causation of RTC.

Methods: Police and death reports of RTCs from 2014-2015 were reviewed for sex, age, vehicle, location, cause of death and toxicology.

Results: In the 87 RTC deaths examined, males accounted for 74% and were mostly aged 20-29 years, whereas the remaining females were mostly aged 70-79 years. Cars accounted for over half the collisions. Car drivers made up 31.03%, pedestrians 21.84% and car passengers 20.69%. Most deaths occurred in the Lothians. The A92 was the commonest road. While 'multiple injuries' was the commonest noted cause of death, head injuries overall were the most commonly found. 11 cases tested positive for alcohol toxicology >100 mg/dL, most of whom were pedestrians and had a higher mean age than the whole group. Cannabis was the most commonly found drug on toxicology.

Conclusion: The male predominance in RTCs is an area of concern. Despite car collisions being the most common, vulnerable road users made up a relatively large proportion. Road related deaths involving intoxicated individuals were found to be older than the average age of the whole group.

17. Dr Who?: Do patients value the pre-operative visit from their anaesthetist?

Alistair Crawford, Matt Davie, Matt Galloway, Linda Karlberg, Fernando Mosler, Hannah Patterson, Eve Sealy, Huai Ling Tan, Sophie Vennard, Ailsa Winter, Rob Sutherland

Background: On the morning of surgery, anaesthetists have a very short period of time to perform an assessment with patients undergoing general anaesthetic. The purpose of this is to provide adequate information, build a rapport and address questions, with the goal of putting the patient at ease. Currently, patients may or may not have had an additional appointment with an anaesthetist prior to the day of surgery. We aimed to compare satisfaction between these two groups, to establish whether or not this additional time is beneficial.

Methods: A qualitative questionnaire was used to explore the concerns of 78 patients after their anaesthetic assessment on the day of surgery. Data collection ran for five weeks in the Department of Clinical Neurosciences at the Western General Hospital.

Results: Overall, satisfaction was very similar between patients who had and had not attended an appointment prior to the day of surgery. 78% of patients who had an appointment before the day of surgery described themselves as "very satisfied" with time, compared to 68% of those who did not. Patients who had never previously undergone surgery were much more likely to express a desire for having had an appointment.

Conclusion: The majority of patients are satisfied under the current system, as anaesthetists are able to perform well under the present time constraints. Patient expectations appear to be low, as they are aware of the challenges faced by anaesthetists and the NHS. Our research could be improved by a larger sample size and the use of a 1-10 satisfaction scale to avoid having to express outright dissatisfaction. Conduction of interviews in a private room would also encourage patients to express their full opinions; in



particular, any negative views. We recommend that first-time surgical patients are targeted for an appointment prior to the day of the procedure.

18. A clinical audit of the management of patients presenting with food bolus obstruction to Ninewells Hospital, Dundee in the context of eosinophilic oesophagitis

Isabelle Bough, Yevedzo Ntuli, Michael Wilson

Background: Eosinophilic Oesophagitis (EoE) is a chronic, inflammatory condition of the oesophagus. It is characterised by intermittent dysphagia, food bolus obstruction (FBO) and histologically-proven eosinophil-mediated inflammation. EoE is identified in up to 50% of FBO presentations; however, the condition is under-recognised and mismanaged. Guidelines on the management of acute FBO recommend food bolus removal with flexible oesophagogastroduodenoscopy (OGD) – additionally, a minimum of six biopsies should be taken from three different oesophageal locations. EoE is diagnosed if the formal eosinophil count shows ≥ 15 eosinophils per high power field. The aim of this audit is to evaluate the management of patients presenting acutely with FBO to Ninewells Hospital, Dundee, and assess the impact on EoE patients.

Methods: A retrospective analysis was undertaken on 317 acute presentations of FBO to Ninewells Hospital, Dundee from January 2008 – June 2011. Patients were identified by the ICD 10 code for FBO in their electronic discharge document, and data on inpatient interventions and post-discharge follow-up was collected using various clinical administrative systems.

Results: 54% of patients presenting with acute FBO received an inpatient flexible OGD. 21% of the remaining patients received an outpatient OGD. 40% of patients receiving an inpatient or outpatient OGD were biopsied; 6% had six or more biopsies taken; and 5% were biopsied in three locations. Of those with eosinophils in their biopsies, 32% had a formal count. Overall, 22.5% of those biopsied were diagnosed with

EoE. 40% of EoE patients had a previous OGD which had not diagnosed their condition.

Conclusion: Analysis indicates inadequate investigation and management of acute FBO, which may be prolonging time to diagnosis and delaying treatment for patients with EoE. This audit has provided clear evidence to encourage the promotion of EoE within specialties that treat acute FBO, as well as highlighting the current guidelines on the management of this common presentation.

19. Perceptions of cheating in a UK medical school

Nicole Hrouda, Trudie Roberts

Background: The GMC emphasises that developing academic integrity is fundamental to the role of future doctors. However, a study from a UK medical school found that a third of their students admitted to cheating during their undergraduate education. Cheating can encompass a range of behaviours; from copying another student's answers in exams, to plagiarism. In recent years, students' use of cognitive enhancing drugs has been considered cheating by some academics. This qualitative study aimed to explore which cheating behaviours are perceived to be more serious than others and how participants justify these opinions.

Methods: Participants consisted of 8 medical students in their 1st and 4th year of study, and 5 members of staff from Leeds Medical School. During a semi-structured interview, participants were asked to place 6 hypothetical scenarios on a numberless scale from 'definitely not cheating' to 'definitely cheating', and justify their decision. Scenarios included use of caffeine tablets, use of methylphenidate, access to an expert family member, OSCE station sharing, essay lending and collaboration. Interviews were recorded, transcribed and analysed using thematic analysis.

Results: The scenarios about having an expert family member or using caffeine tablets were typically placed in the 'not cheating' side of the spectrum. OSCE



station sharing, essay lending, and collaboration were viewed as more serious forms of cheating. Year 4 students were more lenient about OSCE station sharing compared to the year 1 students. Use of cognitive enhancing drugs stimulated debate during the interviews. Participants considered the fairness of the action and its contextual factors; such as the student's underlying intentions, medical school guidelines and society's values. Faculty also considered the impact of the student's behaviour on future practise.

Conclusion: This study has identified that defining the boundaries of cheating is complex; students and staff may need clearer guidance about cheating from academic policy.

20. Identifying and validating stroke diagnoses in UK Biobank

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Background: Stroke is a leading cause of morbidity and mortality in the world. Linkage to routinely-collected health records is a potentially cost-effective method for identifying stroke in UK Biobank (UKB), a large population-based prospective cohort study. However, the accuracy of this approach needs to be evaluated. My project aimed to assess the accuracy of routinely-collected health data in NHS (National Health Service) Lothian in identifying stroke and its subtypes in the UKB.

Methods: We identified UKB participants with relevant stroke codes from routinely-collected datasets. Using TrakCare (TRAK), I developed a protocol for identifying and extracting relevant information into vignettes for each participant. These vignettes were then adjudicated by experts. I calculated positive predictive values (PPVs) for various codes, to assess the accuracy of coded health data against expert adjudication, and to identify the codes and data sources with the highest PPVs.

Results: 419 and 275 participants were included depending on which codes were used. More stroke specific incident codes from inpatient data achieved a PPV of 90% for all stroke, while respective codes from GP data achieved a PPV of only 66%.

Conclusions: I have developed a protocol for identifying and validating UKB stroke outcomes via an NHS Lothian pilot study. Future work should explore whether the accuracy of GP codes would improve with access to additional data, and what effect combining codes from various data sources and the code position would have on the PPV. Our protocol could also be adjusted for use in validating other diagnoses in UKB.