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1. A study to determine the association between menstrual blood loss volume, BMI and fibroids

Sheona Sweeney

Background: Heavy menstrual bleeding (HMB) is said to affect 35% of Scottish women of reproductive age. The condition has physical and psychological impacts, and places financial and time pressure on health services. HMB may be associated with a high body mass index (BMI), as high levels of adipose tissue may increase levels of circulating oestrogen. Uterine fibroids are known to increase menstrual blood loss (MBL), but their relationship with BMI is unclear. Other factors such as smoking, parity, age and medication use should also be considered.

Aims: To determine if BMI is associated with MBL and/ or the presence /size of uterine fibroids.

Subjects/ methods: 67 women of reproductive age, with regular menstrual cycles, not currently taking hormonal therapy, completed menstrual blood loss pictograms for one menstrual cycle. Correlations between MBL and BMI, MBL and fibroids, and associated factors, were calculated using Spearman's correlation coefficient, the Kruskal-Wallis test and the Mann Whitney-U test.

Results: Poor correlation was found between MBL and the following factors individually: BMI, age, smoking, parity and use of certain medications. A positive correlation was observed between fibroid volume and MBL. A negative correlation was seen between fibroid volume and BMI, but statistical significance was not reached.

Conclusions: No correlation was found between MBL and BMI, and associated factors did not influence MBL. However, the upward trend seen between MBL and BMI, and the downward trend seen between fibroid volume and BMI, suggest that further research using a larger sample size may highlight a correlation.

2. High intra-individual variability of tacrolimus clearance in renal transplant recipients on Prograf or Advagraf leads to increased graft loss.

Ross Peagam, Stuart Falconer

Introduction: Recent evidence suggests significant variability for tacrolimus within individual patients, but there is limited data comparing the Prograf® and Advagraf® formulations. There are concerns that patients with high intra-individual variability are at higher risk of graft dysfunction or graft loss.

Methods: 103 renal transplant recipients who were converted from Prograf® to Advagraf® between 2008 and 2011 were included in this study. Tacrolimus variability was calculated before and after conversion using a previously described dose corrected method which determines the percentage variability from the mean. Patients were grouped as high or low variability for both preparations of tacrolimus and compared using a paired t test. Patients were also grouped as 'early' or 'late conversion' if converted <12 months or >12 months after transplant. Patient and graft survival were evaluated for high and low percentage variability of both tacrolimus preparations.

Results: The overall mean percentage variability was higher in patients taking Prograf® compared with Advagraf® ($25.23 \pm 14.63\%$ vs. $21.68 \pm 12.62\%$, $p=0.043$). The variability in patients converted early, was higher for Prograf® compared with Advagraf post-conversion ($30.59 \pm 16.61\%$ vs. $24.17 \pm 12.22\%$, $p=0.038$). There was no difference in variability between Prograf® and Advagraf® in patients converted 'late' ($21.55 \pm 11.89\%$ vs $19.97 \pm 12.70\%$, $p=0.447$). Graft loss was significantly greater in patients with high percentage variability for both preparations of tacrolimus (18.75%) compared with patients with low variability of both preparations, irrespective of conversion time (6.25%), Log-rank $p=0.034$. Patient survival was unaffected by tacrolimus variability.

Conclusions: Tacrolimus variability is higher in patients taking Prograf® than Advagraf® however this is only significant in the first year post transplantation. Patients with high intra-individual tacrolimus variability are at increased risk of graft loss and may require consideration of an alternative immunosuppressive regimen.

3. Validation of the Scottish Stroke Care Audit (SSCA) and Scottish Morbidity Record (SMR01) datasets in Lothian for admissions in 2010 and 2011

Rebecca Martin

Introduction: The Scottish Morbidity Record (SMR01) includes information on hospital inpatient stays using the International Classification of Diseases-ICD-10 to code diagnoses identified from clinical records. The Scottish Stroke Care Audit (SSCA) records data for stroke diagnoses in acute hospitals. The aim of this study was to investigate discrepancies in stroke diagnosis in SMR01 and SSCA for Lothian data in 2010-2011.

Methods: SMR01 records with a primary stroke diagnosis were matched to SSCA entries and any further SMR01 records with ICD codes I61, I63, I64 and G45 were also identified. Discrepancies in stroke diagnosis between the two sources were investigated using the Lothian electronic patient administration system (TRAK).

Results: There were 3572 records with 59% appearing on SMR01 and SSCA, 13% in SSCA only and 28% in SMR01 only. Reasons for SSCA missing stroke diagnosis included quick discharge, death after admission, hospital transfer and admission to a non-stroke unit. Problems with final discharge summaries, another diagnosis overshadowing stroke and information on TRAK inconsistent with stroke diagnosis were causes identified for SMR01 missing stroke.

Conclusion: These findings suggest that both databases appear to under-estimate the number of stroke episodes, therefore, several databases are probably needed to identify all strokes in Lothian.

4. The EF-hand domain of phospholipase C- η 2 directs its sensitivity to Ca^{2+}

Annika Eisenschmidt, Petra Popovics, L Nadia Kamil, Alan J Stewart

Phospholipase C- η (PLC η) enzymes are a class of PIP₂-hydrolysing enzymes involved in signal transduction. PLC η 2 has gained most attention due to its expression in brain regions associated with memory and cognition and more recently, its role in neurite growth. We have shown that PLC η 2 can sense Ca^{2+} (stimulated by $<1 \mu\text{M}$ $[\text{Ca}^{2+}]_i$) suggesting that it amplifies neuronal Ca^{2+} signals. PLC η enzymes possess an EF-hand domain composed of two EF-hand loops; a canonical (12-residue) loop and a non-canonical (13-residue) loop. Here we examined whether this domain is involved in Ca^{2+} -sensing. Inositol phosphate accumulation was measured in permeabilised COS7 cells transiently expressing PLC η 2 at varying free $[\text{Ca}^{2+}]$ and in non-permeabilised cells in response to monensin. The wildtype enzyme exhibited a ~ 3 -fold increase in activity in permeabilized cells between 0.1 - $1 \mu\text{M}$ free $[\text{Ca}^{2+}]$. Monensin induced a ~ 6 -fold increase in wildtype PLC η 2 activity. Mutation of D256 of the canonical EF-loop to alanine reduced calcium sensitivity 10-fold and did not respond to monensin, highlighting the involvement of this residue in Ca^{2+} -sensing. Involvement of the non-canonical loop in Ca^{2+} -binding was examined using the following mutants: D292A, H296A, Q297A, E304A. Interestingly, the Ca^{2+} -sensitivities and monensin responses were largely unaffected by the four mutations. This suggests that within the EF-hand domain only the canonical EF-loop participates in Ca^{2+} -sensing. The Ca^{2+} -binding properties of a recombinant fragment of PLC η 2 (containing the EF-hand domain) were also examined using isothermal titration calorimetry. This study demonstrates that the EF-hand domain of PLC η 2 is directly involved in its activation by Ca^{2+} .

5. Cause and Consequence of Cardiorespiratory Hospitalisation in Idiopathic Pulmonary Fibrosis

Andrew Hunter, Nik Hirani

Background: Idiopathic pulmonary fibrosis (IPF) patients are frequently hospitalised, with data on the incidence and consequence of hospitalisation being drawn from clinical trials. We aimed to analyse the causes and consequences of first cardiorespiratory hospitalisation in a clinical population of definite and probable IPF patients.

Methods: 247 (109 definite, 138 probable) IPF patients were prospectively recruited and studied. Electronic management systems were searched for the presence of cardiovascular risk factors at diagnosis and details of cardiorespiratory hospitalisation.

Results: Definite and probable IPF cohorts were similar in baseline characteristics, survival, and hospitalisation causes and survival. 40.4 and 50.7% of definite and probable IPF patients had hypertension. More than 25% had evidence of ischaemic heart disease. 70 definite and 67 probable IPF patients had at least one emergency cardiorespiratory admission, and acute exacerbation (AE) and pneumonia represented 42.9% and 35.8% of first admissions, respectively. Pneumonia or AE admission had a median survival of 117 days versus 581 days after all other first cardiorespiratory admissions ($p=0.0026$, $HR=1.981$).

Conclusions: Both definite and IPF patients can be included in future IPF studies. AE and pneumonia admissions could be used in IPF clinical trials as suitable endpoint measures, and more reliable to analyse when grouped together.

6. An Assessment Of Potential Living Donors With Persistent Non-Visible Haematuria (PNVH)

Yin Yee Susan Ho

Introduction: In the UK, approximately 2600 kidney transplants are performed annually and 30% of the kidneys are from living donors.^{1,2} The current BTS guidelines requires potential donors with PNVH to undergo additional investigations.

Objectives: To evaluate whether the BTS guideline is followed in Liverpool, the appropriateness of the guidelines, and also to ensure the service is performed in a timely manner.

Method: A retrospective audit of the medical records of 28 PLD with PNVH from 1997 to 2012. Information on the urinalysis results, waiting time to investigations, investigation results and, outcome after assessments was collected.

Result: The majority of the PLD had 'trace' or '+' haematuria on urinalysis. Thirteen (46%) have donated their kidneys or are proceeding to donation and four (14%) were unsuitable for donation. 94% of PLD had normal cystoscopies. The median waiting time from for a cystoscopy was five weeks. 50% of PLD had normal kidney biopsies. The median waiting time for a kidney biopsy was five weeks, and three months for electron microscopy results. No complications from cystoscopy or kidney biopsy were recorded.

Conclusion: The BTS guideline is well adhered to and the majority of the PLD found the investigations acceptable. However, there was an unacceptable long delay for the result of the EM sample. A multidisciplinary meeting has taken place to identify ways to reduce this delay. Of those patients who underwent kidney biopsy 33% had a significant abnormality precluding transplantation. This investigation is therefore justified for this indication in our PLDs.

7. Modelling the Internal Neurovascular Distribution of the Human Gastrocnemius Muscle, and its Clinical Applications.

Christopher Evans

The intramuscular neurovascular distribution of the human gastrocnemius muscle is an under-researched and contentious subject. This represents a considerable gap in medical knowledge, as the gastrocnemius muscle is used extensively in reconstructive and plastic surgery, and as a target for muscle biopsy. Eight cadaveric human gastrocnemius muscles were dissected to demonstrate their internal neurovascular distribution. The vessel trees were accurately reproduced onto clear acetate sheets, and scanned into a computer. Image registration software was used to transform the traced vessel trees to a common shape, allowing quantitative analysis of the vessel distribution.

The optimal biopsy site of the gastrocnemius muscle was proposed based on neurovascular coverage, muscle thickness and the surrounding extramuscular structures. This was determined to be in the lower quartile of the medial head, not less than 1/10th of the muscle length superior to the tendinomuscular junction. It was recommended that ultrasonography be used to locate this region, and be used to guide the placement of the biopsy instrument.

The use of gastrocnemius as a superiorly based muscle flap to cover defects around the knee, and inferiorly based flap to cover defects around the middle third of the tibia was evaluated, based on muscle length, neurovascular distribution and area coverage. Strong evidence exists to support the use of gastrocnemius as a superiorly based muscle flap, but evidence proved inconclusive concerning the suitability of gastrocnemius as an inferiorly based muscle flap.

8. Endoscopic investigation in the elderly: Is sedation safe?

Liam Jones

Elderly patients make up an increasing proportion of the population, placing unprecedented demand on surgical services. Anaesthetist assessment of this patient group is hampered by lack of reliable evidence, leading to a new subspeciality “Geriatric Anaesthesia”. However, to date the focus has been almost exclusively on general anaesthetic risk, to the detriment of research into less invasive procedures with (safer alternatives such as) sedation.

Gastroenterological probe investigation is increasingly indicated, in part because of the recent colon cancer screening program (lower GI) in the over 60 population. However, endoscopic procedures are uncomfortable and not without risk, especially in the geriatric population – limiting uptake (unless sedation such as propofol is offered).

PubMed was searched for “Propofol” AND (“Elderly” OR “Geriatric”) AND (“Colonoscopy” OR “Endoscopic”). Papers involving adjuvants (such as benzodiazepines) were excluded, as was data relating to other procedures such as ERCP, whereas papers that did not specify were left in.

Twenty seven abstracts were initially generated by PubMed. There were 5 primary research articles with at least 100 patients in, meeting the criteria for subsequent analysis, totalling 4571 procedures.

Risk factors for adverse outcomes (eg. perforation, over sedation) included body weight < 60 kg, and more thorough investigation. More O₂ desaturation events were reported in the elderly population, but arterial hypotension was less common. Three of the studies were conducted without the assistance of anaesthetic doctors, safe outcomes were nevertheless reported.

In conclusion, colonoscopy and similar endoscopic procedures are safe in the elderly under propofol, even without the assistance of anaesthetists.

9. Bleeding and Dual Antiplatelet Therapy

Elsbeth Pilkington, Katherine Fox, Rachel Armitage, K A A Fox

Introduction: Dual antiplatelet therapy has been associated with an increased risk of bleeding events which predisposes to poorer prognosis. Minor bleeding events may predispose to anti-platelet therapy discontinuation, yet, limited research has assessed patient knowledge of minor bleeding and risks of events. Our prospective study aimed to investigate these questions and compare knowledge about anti-platelet therapy and warfarin anticoagulation.

Methods: A questionnaire was designed to interview a study group consisting of 90 patients taking antiplatelet therapy (clopidogrel and aspirin) and 42 taking anticoagulation therapy (warfarin), which was used as a reference set where systematic information on bleeding is provided. The questionnaire focused on incidence and patient knowledge of bleeding events associated with their therapy. In addition, 30 doctors of varying specialities were interviewed with a separate questionnaire to establish perceptions about risks of bleeding events and whether patient information is adequate for these therapies.

Results: no significant difference was found in incidence of minor bleeds between antiplatelet therapy and anticoagulation with warfarin. There was a significant difference, in favour of anticoagulation, between these groups in knowledge of risk of bleeding events ($p=0.0001$) and in knowledge appropriate actions in the event of a minor bleed ($p=0.0001$).

Conclusions: these findings provide evidence that despite similar risks of bleeding for both therapies, patient knowledge in the anticoagulation group was significantly greater in regards to bleeding risk and appropriate actions in the event of a bleed. This indicates that inadequate information is provided when prescribing antiplatelet therapy and improvements could increase patient safety.

10. Are doctors satisfied with their jobs? Relationship between the 'Big Five' Personality Traits and Job Satisfaction among Consultants and Registrars

Fahar Niazi, John Calvey

Aim: The purpose of this study was to investigate the relationship between the 'Big Five' personality variables (Extraversion, Neuroticism, Conscientiousness, Agreeableness and Openness) and job satisfaction in doctors.

Method: A cross-sectional survey was conducted where participants were asked to complete a Newcastle Personality Assessor and job satisfaction form (1, 2). Doctors within the Morecambe Bay NHS Trust were asked to participate in the trial. The sample comprised 23 consultants and 21 registrars. Based on the answers provided, the doctors were labelled as having specific 'dominant personalities'. Simultaneous job satisfaction questionnaire results were obtained.

Results: 9 of 23 consultants were predominantly Conscientious compared to the registrars with 8 of 21. Overall, doctors who were deemed Conscientious or Agreeable scored highest on job satisfaction. Clinicians with Neuroticism as their dominant personality scored lowest on job satisfaction. On average, the Conscientious consultants had a higher job satisfaction score compared to the Conscientious registrars. Consultants who were Agreeable had a similar job satisfaction to Agreeable registrars.

Conclusions: The study indicates that a doctor's personality influences their job satisfaction. Job satisfaction may not only relate to extrinsic factors (e.g. salary and working conditions). Consultants who were Conscientious or Agreeable had greater satisfaction at work compared to registrars with the same Big Five variables. The consultants appeared more satisfied with their jobs compared to the registrars. Future research on the Big Five personalities and job satisfaction is encouraged to offer a more comprehensive understanding of the results identified in this paper.

11. Early Phase Clinical Trials for Therapeutic Cancer Vaccines

Jason Chai

Early phase clinical trial designs for therapeutic cancer vaccines have been adopted from previous trials for cytotoxic drugs which are different in both the mechanism of action and response from patients. Furthermore, the TGN1412 trial in Northwick Park Hospital has raised safety issues concerning cancer immunotherapy.

Objectives: Hence, a literature review was carried out:

- i) To provide an overview of recognised and possible adverse events of therapeutic cancer vaccines.
- ii) To suggest a safe and efficient early phase clinical trial design to facilitate the development of therapeutic cancer vaccines.

Methods: The following databases were used to identify papers in the subject area within the past 10 years:

- i) PubMed
- ii) Scopus
- iii) Web of Knowledge

Specific keywords and search limitations were used to identify relevant papers.

Results: Therapeutic cancer vaccines have been shown to be safer than conventional cytotoxic drugs despite several clinical trials showing adverse immunological events. Determining the starting dose in Phase 1 clinical trial may benefit from the Minimal Anticipated Biological Effect Level (MABEL) method instead of the conventional No Observed Adverse Effect Level (NOAEL). Dose escalation methods more suitable for therapeutic cancer vaccines have been suggested but unfortunately have rarely been put into practice, making it difficult to quantify safety and efficiency.

Conclusion: Adverse immunological events in previous trials should serve as learning points not deterrents to the development of cancer vaccines. Early phase clinical trials should utilise methods suited to the mechanism of action and host response to vaccines.

12. Effect of central sensitisation on future pain and disease progression in patients with Rheumatoid Arthritis

Luke Harries

Research Environment: Arthritis Research UK Pain Centre

Background and Objectives: DAS28P is a novel, surrogate measure for central sensitisation in Rheumatoid Arthritis (RA), which represents the patient-reported proportion of disease activity. This project tested the hypothesis that DAS28P was associated with future pain and disease progression in RA.

Methods: Data were drawn from the Early Rheumatoid Arthritis Network (ERAN) of 1236 early RA patients. A Generalised Estimating Equation (GEE), adjusting for confounders, was used to examine the association between DAS28P and future pain over a 3 year period. Furthermore logistic regressions with adjustment for confounders were used to see whether baseline DAS28P was associated with pain at 2 and 5 years; and measures of disease progression at 2 years.

Results: GEE shows that DAS28P consistently predicts the next year's pain over 3 years (B:-0.11, 95% CI:-0.19 to - 0.02, $p=0.015$). However DAS28P at baseline was not significantly associated with pain at 2 years (aOR: 1.25, 95% CI: 0.86-1.82, $p=0.246$), or 5 years (aOR: 0.79, 95% CI: 0.45-1.39, $p= 0.414$). Furthermore DAS28P was not significantly associated with disease progression (DAS28, HAQ, Radiology scores) at 2 years.

Conclusions: DAS28P could be a useful clinical index for predicting pain at 1 year. However after longer time intervals DAS28P is not associated with future pain or disease progression, perhaps due to the transient nature of pain and the large number of risk factors being adjusted for.

13. As Future Doctors And Advocates, What Are Medical Students' Attitude And Commitment Towards Organ donation?

Sureka Suriyakumar

Background: As the UK faces major shortages of donor organs, it sees nearly a thousand patients die every year whilst waiting on the organ transplant list. Research suggests that a potential solution to bridging the gap between the rising demands and the poor supply of accessible donor organs pivots on Healthcare professionals (HCP) whose attitudes can have a significant impression on patient and public inclination to donate. However, the position of current and future HCPs in regards to organ donation still remains largely unknown. This study aims to recognise their attitudes and commitment towards becoming potential organ donors and appraise any disparities observed between current and future HCPs.

Method: Third year medical students and Intensive Care Unit doctors and nurses completed a self administered questionnaire exploring their attitudes and the positive steps taken by them towards donating their organs.

Results: The sample included 59 medical students and 36 current HCPs. All respondents agreed with organ donation, and 71% of the sample wished to become potential donors. Positive attitude and commitment levels were higher among current HCPs. Interestingly, only 29% of students felt they aware of the legalities of organ donation compared to 81% of the professional cohort. Majority of students who had not taken a positive step claimed lack of knowledge or initiative as the main reason.

Conclusion: Despite positive attitudes among students, a more tentative approach towards becoming organ donors can be observed. Adopting novel mediums to educate future HCPs could lead to better advocates in the future.

14. Chemoprevention of Colorectal Cancer through Cox-2 Inhibitors: Current Evidence

Samir Abdalla, Barry J Campbell

Introduction: Chemoprevention is the newest form of prophylaxis against colorectal cancer in high-risk patients. Over the past 2 decades, mortality rates of colorectal cancer have dramatically decreased due to improved screening programs and surgical advances. However, the number of deaths attributed to the disease is still alarming. In addition, the risk of contracting this disease is nearly definitive in hereditary conditions (FAP/HNPCC). However, in those with IBD the risk is marginally lower but still 25 times the general population. Moreover, the disease is just as lethal in its sporadic form which accumulates 75% of the current prevalence.

Aim: Explore the current evidence of the use of Cox-2 inhibitors as a chemopreventive for colorectal cancer.

Methods: Literature searches were conducted through PubMed, OvidSP, Scopus and Google Scholar. Keywords such as 'Colorectal Cancer', 'Cox-2 inhibitors' and 'Colitis' were used.

Results: APC trial found *"31 fewer patients per 1000 a year than placebo developed high risk advanced colorectal adenomas at a cost of 5 additional patients per 1000 a year who had a serious cardiovascular adverse event."*

PreSAP trial found *"17 fewer patients per 1000 a year developed advanced adenomas with 2 additional patients per 1000 per year developing a serious cardiovascular adverse event"*

The review showed that Cox-2 inhibitors are both cost effective as well as efficacious in high-risk patients when used in adjunction to chemotherapy/radiotherapy while continuing regular surveillance. Even though prolonged use of Cox-2 inhibitor has shown an increased risk of a cardiovascular event; however this can be protected against through the use of cardiovascular prophylaxis alongside the chemopreventive.

15. The Influence of salivary antimicrobial protein levels on upper respiratory tract infection incidence among active males and females.

Hannah Preston

A prospective observational study was undertaken to examine whether salivary antimicrobial protein (AMP) concentrations (salivary immunoglobulin A (sIgA), salivary lactoferrin, salivary lysozyme (s-lys) and salivary amylase) influence the incidence of upper respiratory tract infection (URTI) among male and female athletes aged 18-39 years ($n=235$), over the winter training period. A second aim was to determine if there were sex differences in salivary AMP levels and URTI incidence. A timed resting morning unstimulated saliva sample was taken from each athlete to determine AMP concentrations and secretion rates (SR). URTI symptoms were assessed using a validated daily questionnaire over the 4-month period. No significant correlations or influences were found between the absolute mean concentrations of s-lys, s-lactoferrin, sIgA or s-amylase and URTI incidence in either sex (all $p>0.05$). Females had a significantly higher symptom severity score for the first URTI episode compared to males ($p<0.05$), yet there were no significant differences in salivary AMP concentrations, URTI incidence or URTI duration, with an average number of 9.7 ± 6.4 days in males and 9.4 ± 6.0 days in females ($p = 0.851$). Males had a significantly higher s-IgA SR ($t(234)=2.79$, $p = 0.006$) and s-amylase SR ($t(233) = 2.22$, $p = 0.028$) compared to females, however no difference in salivary flow rate. These higher secretion rates did not seem to influence URTI incidence (males 0.6 ± 0.8 , females 0.8 ± 0.9). Although there are observed differences in some aspects of immunity between sexes, mucosal immune variable differences were not substantial enough to affect URTI incidence. Absolute mean concentrations appear to have no associations with URTI incidence in this study. Further research is needed to determine if relative changes in salivary AMP concentrations can act as predictive markers for URTI onset.

16. The role of $\alpha 2\beta 1$ integrin in chemotherapy resistant ovarian high grade serous carcinoma

Samuel Chambers, Juliet Bottle, Suha Deen, Wakkas Fadhil

Background: Ovarian cancer is an aggressive disease known for its poor survival rate and late diagnosis, particularly in ovarian high grade serous carcinomas (HGSC). Changes in adhesion molecule expression are required for tumour metastases to survive and successfully invade secondary sites. Integrins can promote metastasis and tumour survival in many cancers and induce chemotherapy resistance by inhibiting apoptosis. Currently, the effects of $\alpha 2\beta 1$ integrin expression on ovarian cancer patient survival are unknown. The hypothesis was that increased $\alpha 2\beta 1$ integrin expression would correlate with worse outcome in cases of ovarian HGSC.

Method: Using a cohort of 287 patients, ovarian tumour samples were tested by immunohistochemistry to determine expression of $\alpha 2\beta 1$ integrin. Divided into two expression groups, samples were analysed against clinico-pathological variables progression-free survival (PFS) and overall survival (OS).

Results: There was a negative significant correlation between the expression of $\alpha 2\beta 1$ integrin and OS and PFS ($p=0.038$ and 0.003 respectively). Interestingly, when the data were compared according to resistance to chemotherapy, it appeared that this trend was maintained in cases that were refractory or resistant to chemotherapy only (mean survival 12 months and 3 months for the low and high expression respectively), whereas cases responding to chemotherapy showed a trend towards the opposite profile (mean survival 30 months and 33 months for the low and high expression respectively).

Conclusions: $\alpha 2\beta 1$ integrin has an interesting profile in response to chemotherapy in ovarian HGSC reflecting its role in inhibiting apoptosis. This feature may have a significant contribution in the field of targeted therapy.

17. Correlation of MRI findings with histopathology following radical prostatectomy; a clinical audit

Lydia Robb

Aim: To determine whether standard T2 weighted MR imaging is of benefit for the diagnosis of prostatic carcinoma, and if an investigation with higher sensitivity is required.

Method: The audit looks at a pool of 71 patients, all of which underwent a pre operative MRI of the prostate prior to laparoscopic radical prostatectomy. A comparison between the correlation of MRI staging with the final histopathology report to determine the accuracy in prediction of prostatic carcinoma achieved with using MRI as a diagnostic tool.

Results:

++ True positive. When MRI stage matched final histopathology

-+ False positive. When the MRI stage did not match histopathology

Stage	++	-+	Total
T0	0	1	
T1	0	0	
T2	35	4	
T3	1	26	
T4	0	4	
Total	36	35	71

Discussion: Out of 71 cases only 36 were correctly staged by MRI, making an overall miss rate of 50%. Accuracy from MRI is displayed when looking at T2 prediction, with 89% corresponding to final histopathology. The results also demonstrate the inaccuracy of MRI in prediction of more severe cases. Cases of T3 had a miss rate of 96.3%, and 100% for those with T4.

Conclusion: MRI predicts presence of disease- which clinically would already be identified with TRUS biopsy. MRI has low sensitivity in precise staging of adenocarcinoma, in most cases underestimating.

18. Transition from paediatric to adult health care for children with chronic neurological disorders – 2012 Alder Hey Case Series.

Masoud Sakhinia, Andrew Curran

The effective transition of children with chronic neurological disorders to adult care is one of the greatest challenges facing paediatric healthcare. However, there has been very little published on the existing models of transfer.

A qualitative interpretive design was used to gain an in-depth understanding of family members and professionals perceptions of the transition process. Purposive sampling was used to obtain a patient field of 8 parents and 8 professionals.

88% of the parents within the study agreed that transfer to adult services was an unnecessary step. Apprehensions included the lack of personal care offered in adult services. 69% of the professionals and family members within the study were discontented with the current transfer process within the hospital; with problems including the lack of funding and communication between the designated services and family members.

With general dissatisfaction surrounding the current transition process; recommendations include the inclusion of an adolescent unit within the hospital. In addition, a period of concurrent joint transition clinics, attended by the respective adult and paediatric neurologists, would seem to result in a smoother transfer. Finally, a 'health transition plan', as recommended by the Department of Health, seemed to show great results in its correct application.

19. Do MHC-Ig fusion products influence immune responses?

Ala Noaman

Introduction: Recent advances in molecular medicine have revealed molecules with the capacity to treat certain cancers and prevent tissue rejection. These molecules exist naturally on exosomes and are known as MHC dimers. They have the ability to immunomodulate T-cells. Attempts to replicate these exosomal dimers for in vivo experiments have proven difficult and in this study we synthesise novel, efficient MHC-Ig fusion products and examine their effects on T-cells in vitro.

Methods: MHC molecules were cloned from cDNA by PCR, and cloned into pFUSE immunoglobulin G1/G4 vectors (courtesy of Dr Elaine Campbell). The detection and quantification of MHC-Ig was performed using immunoblotting and densitometric analysis. The effect of MHC-Ig on T-cell interferon-gamma production was studied using ELISPOT. For quantitative studies, H-2K^b-Ig products, bound to varying concentrations of SIINFEKL, were added into cells of the B3Z line and absorption read at 570 nm.

Results: Immunoblotting confirmed the presence of MHC-Ig products in the supernatants. ELISPOT analysis revealed that antigen loaded MHC-Ig significantly stimulated IFN-gamma production, contrasting to the unloaded MHC-Ig. Increased peptide loading, as performed on the H-2K^b-Ig products, was shown to increase the stimulation of the T-cells.

Conclusion: Our results confirm that MHC-Ig fusion products are capable of stimulating T-cells *in vitro*. Quantitative analysis on the murine model showed a positive correlation between peptide quantity and activation. This sheds light onto the possibility of using efficiently engineered MHC-Ig to mimic exosomal dimers *in vivo*.