characteristics on a suitable polymer with ideal bulk properties provides a basis for further research into the effects of PSM on cell behaviour.

**0171: PERSONALISING WOUND CARE: A GENE EXPRESSION SIGNATURE FOR PREDICTING CLINICAL OUTCOMES OF VENOUS LEG ULCERS**

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**Aim:** Despite their widespread occurrence, sensitive prognostic markers of chronic venous leg ulcers (VLUs) are noticeable by their absence. We describe a novel gene expression signature of wound edge tissue in VLUs which allows accurate personalised outcome modelling, permitting individually tailored treatments.

**Methods:** Sequential refinement and testing of a gene signature was developed utilising three distinct cohorts of human wound tissue. Over 111 pre-selected candidate genes were first screened using a cohort of acute and chronic wound tissue (n = 24) by way of quantitative PCR. Genes showing significant differences were combined and examined as part of a controlled prospective study of 71 patients with VLUs. The final signature was evaluated utilising a prospective, blinded study comprising 85 consecutive patients with VLUs.

**Results:** The initial gene signature comprised 24 genes (WD24) that allowed distinction between healing wound from non-healing wounds (p < 0.0001, sensitivity: 40%, specificity: 98%). Subsequent refinement excluded 10 genes to create a final 14 gene signature (WD14) which demonstrated significant prognostic power in a prospective, blinded study (p < 0.00001, sensitivity: 84%, specificity: 74%).

**Conclusion:** We report a novel gene signature that can predict wounds at low propensity to heal with current treatment strategies. Advanced wound care products and therapies may be of particular benefit to this population.

**0227: AN INCREASED POST-OPERATIVE INFLAMMATORY RESPONSE IS ASSOCIATED WITH REDUCED SURVIVAL FOLLOWING RESECTION OF COLORECTAL LIVER METASTASES**


**Aim:** The inflammatory system promotes cancer progression. Markers of inflammation are raised in cancer and correlate with reduced survival. We explored the effect of peri-operative inflammatory markers on survival following liver resection for colorectal liver metastases (CLM).

**Methods:** In 194 CLM patients, pre-operative and post-operative (days 1, 3, 5 and 7) plasma neutrophil count, monocyte count and C-reactive protein (CRP) were obtained from hospital databases and correlated with survival.

**Results:** Median age was 63 years (range 23–88), 65% were male. A median of 2 metastases (range 1–12) were resected. Median survival from CLM surgery was 33 months (range 11–102). Pre-operative neutrophil and monocyte count and pre and postoperative CRP did not correlate with survival. On univariate analysis, raised post-operative day 5 (POD5, p = 0.04) and POD7 (p = 0.02) neutrophil count and a POD5 (p = 0.09) and POD7 (p < 0.01) monocyte count was associated with reduced overall survival. On multivariate analysis, POD5 and POD7 neutrophil count (p = 0.03 and p = 0.02 respectively) and POD7 monocyte count (p < 0.01) were associated with reduced survival.

**Conclusion:** Post-operative inflammatory markers correlate with reduced overall survival in CLM surgery. This suggests that an exaggerated post-operative inflammatory response is associated with aggressive and worse prognosis CLM cancer.

**0344: REDUCED SERUM SELENIUM: A MOLECULAR RISK FACTOR FOR ABDOMINAL AORTIC ANEURISMAL DISEASE?**

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**Aim:** Abdominal aortic aneurysm (AAA) is a common condition present in approximately 4% of the male UK males over 65. Studies show levels of several heavy metals including Selenium (Se) may affect both aneurysm formation and growth. The aim of this study was to look at Se levels relating to AAA size.

**Methods:** Males undergoing AAA screening underwent a health and medication questionnaire prior to Duplex ultrasonography (USS) to assess AAA size. Measurement of serum selenium concentration was performed. Data was analysed using a one-way analysis of variance and post hoc Bonferroni-corrected independent samples t-tests.

**Results:** 73 patients were allocated to 3 groups. The control group: AAA (<3 cm) presented with a Selenium concentration of 0.93 µmol/L (mean) +/-0.15(SD) By comparison Selenium concentrations were lower in patients with AAA 3–4.4 cm 0.78 µmol/L (p < 0.05), and AAA 4.5–5.4 cm 0.78µmol/L (+/-0.19) (p < 0.05). An inverse relationship was observed between serum Selenium concentration and AAA diameter (r = −0.56, P < 0.05, pooled data).

**Conclusion:** Our findings support the concept that depressed serum Selenium may prove a molecular biomarker with the potential to “track” patients potentially vulnerable to aneurismal disease.

**0444: HYPOVITAMINOSIS D, A CAUSATIVE FACTOR IN FRACTURES OF THE FIFTH METATARSAL?**

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**Aim:** Hypovitaminosis D has been associated with fragility fractures in many parts of the body. We believe that low Vitamin D could be an aetiological factor in fractures of the fifth metatarsal.

**Methods:** A prospective study of patients with fifth metatarsal fractures was conducted. Patients had their vitamin D and calcium levels measured. Levels were compared to results from a recent study published by Smith et al.

**Results:** Thirty patients with fifth metatarsal fractures were studied (22 metatarsal base, 6 shaft, and 2 stress). Average patient age was 49 (range 22–83). 7 patients (23%) had a Vitamin D level consistent with deficiency, and a further 11 (37%) had a level consistent with insufficiency. Vitamin D levels were significantly lower in patients with fifth metatarsal fractures than in the control group. Average Vitamin D levels in winter fractures were lower (23.74 µg/L) than for those sustained in summer (29.94 µg/L) (p < 0.01).

**Conclusions:** Hypovitaminosis D was more common in patients with fifth metatarsal fractures than in the general population. Vitamin D supplementation can improve healing rates and reduce the risk of fragility fractures, and it should therefore be part of regular practice to check Vitamin D levels in these patients, and supplement where necessary.

**0547: RENAL TUBULAR DYSFUNCTION FOLLOWING DONOR NEPHRECTOMY AND ITS IMPACT ON RESIDUAL KIDNEY FUNCTION**

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**Aim:** To investigate the impact of donor nephrectomy on the physiology of the residual kidney through the validated markers of ATP depletion, tubular dysfunction, GFR and hyperfiltration.

**Methods:** 48 patients undergoing hand-assisted-laparoscopic-donor-nephrectomy (HALDN) consented to collection of urine and plasma pre/postoperatively (immediate, day 1, day 2, day 3, day 30). Urinary retinol-binding-protein (RBP), urinary-albumin-creatinine ratio (UAC) and plasma-cystatinC, calculated GFR were measured with colormetric nephelometry.

**Results:** Cohort mean age was 46yrs (SD11.7) with 31 female. RBP levels were normal preoperatively (mean 9.5 mg/ml SD5) and peaked on day3 (mean 26.0 mg/ml, min 31 max 12004) before normalising at day 30 (mean 14.1, SD5). UAC was normal preoperatively (mean 2.2 g/ml SD5) and peaked postoperatively (20 g/ml SD4) before reaching a steady-state at day 3 5.6 g/ml (SD13). Peak RBP levels demonstrated a positive correlation with post/preoperative CystatinC ratio (r = 0.56 p = 0.04) and UAC ratio (r = 0.44, p = 0.04). In a linear regression model [F(4,34) = 13.10, R^2=0.61 p = 0.00] adjusted for preop-GFR, day 3-GFR, age and sex; day 3 RBP was an independent negative predictor(beta = −2.39 p = 0.022) of day 30 GFR.
Conclusion: Our results indicate the existence of a mitochondrial stress environment with a lasting negative impact on residual kidney-function at day 30 likely reflecting a renal-tubular dysfunction in the remaining kidney. Further biochemical analyses are ongoing to confirm the nature of this dysfunction allowing the targeting of timely interventions.

0598: EFFECTS OF ENDOTHELIN RECEPTOR ANTAGONISM IN AN EXPERIMENTAL MODEL OF RENAL TRANSPLANTATION


Aim: Uncontrolled Donation after Circulatory Death (uDCD) donors provide a large potential source of kidneys but there is reluctance to use them due to prolonged warm ischaemic times. Endothelin-1, a potent vaso-constrictor, is a major contributor to ischaemic injury. This study aimed to identify the benefit of endothelin receptor blockade in an experimental model of uDCD transplantation.

Methods: Porcine kidneys underwent 60 minutes warm ischaemia and 2 hours cold ischaemia followed by 3 hours of reperfusion with autologous blood without (control, n = 6) and with (n = 6) 500μg BQ-123, a selective ET1 endothelin receptor antagonist. Markers of renal function and injury were analysed.

Results: Renal blood flow was significantly higher in the experimental group at 15–30 minutes of reperfusion (29.6–37.7 vs. 13.1–18.2 ml/min/100 g, p = 0.02), after which, although higher throughout, statistical significance was lost. Urine output, creatinine clearance and oxygen consumption were also higher in the experimental group throughout but statistical significance was only seen in the 1st hour urine output (83 vs. 32 ml/hr, p = 0.01). Urinary Neutrophil Gelatinase-Associated Lipocalin (NGAL) levels were not different between the groups.

Conclusion: Kidneys can recover from warm ischaemic injury. BQ-123 appeared to improve perfusion and function initially but did not have a sustained effect or significant overall benefit.

Association of Surgeons of Great Britain & Ireland Short Paper Session

0002: SURGICAL AND TRANSCATHETER CLOSURE OF CONGENITAL CORONARY FISTULAE: OUTCOMES FROM A NATIONAL AUDIT

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Aim: To report short and long term outcomes after surgical and transcatheter correction of congenital coronary fistulas (CCF).

Methods: Using data from the UK Central Cardiac Audit Database we performed a retrospective analysis of all patients undergoing surgical or transcatheter correction of CCF between 2000 and 2012.

Results: Out of 81 patients (48.2% Male, 51.8% Female), 34 (42%) underwent surgical repair and 47 (58%) had transcatheter procedures. The median ages were 12.6 years for surgery (range, 0.08–68.2) and 7.8 years (range, 0.01–778) in the catheterization group. Mean follow-up times were: 5.3 years (range, 0–13.0) for the surgical group and 4.6 years (range, 0–12.7) for the catheter group. There was no 30-day mortality in the entire cohort. One-year mortality for the surgical group was 7.41 % vs. 2.94 % for the catheter group (p = 0.58). In the catheter group 4 patients (8.51%) required one or more reinterventions, compared to no reinterventions in the surgical cohort (p = 0.13).

Conclusions: CCF repair via transcatheter or surgical approach is attainable in an early mortality and good medium-term results. Careful patient selection would have to be partly responsible for these excellent results. Intervention is overall infrequent and it appears to be higher after transcatheter embolisation.

0418: TRANS-VAGINAL DUPLEX ULTRASOUND FOR DETECTING PELVIC VEIN INCOMPETENCE IN WOMEN: A PILOT STUDY

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Aim: Pelvic vein incompetence (PVI) is diagnosed by reflux venography. This is invasive, nephrotoxic and involves ionizing radiation in young women. Trans-vaginal duplex ultrasound (TVU) is a non-invasive and entirely safe alternative. We compared TVU with reflux venography for the detection of PVI.

Methods: Women with clinical suspicion of PVI who attended for TVU and reflux venography were included in this study (n = 20). Sensitivity, specificity, positive and negative predictive value (PPV, NPV) were calculated for TVU with reflux venography as the ‘gold standard’.

Results: 40-paired TVU and reflux venography images were analysed from 20 women, mean (range) age 45 (25–55). PVI was detected in all 20 images with TVU and 19 of 20 (95%) images with reflux venography. The sensitivity and PPV of TVU to detect PVI was 100% and 95% respectively. TVU identified left ovarian vein incompetence with a sensitivity and specificity of 78.6% and 66.7%; right ovarian vein incompetence with sensitivity and specificity of 71.4% and 100%; left internal iliac vein incompetence with sensitivity and specificity of 91.7% and 100%, and right internal iliac vein incompetence sensitivity and specificity of 70% and 90% respectively.

Conclusion: TVU is accurate and safe alternative to reflux venography in diagnosing of PVI.