## 3C TRANSPLANTATION AND UROLOGY

### O83    ROBOT-ASSISTED LAPAROSCOPY IN UROLOGY - A QUALITATIVE STUDY

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**Introduction:** Research on robotic-assisted surgery tends to focus primarily on evaluating clinical outcomes, without considering the acceptance of such technology amongst clinical teams. In an effort to address this, a qualitative study was conducted, to determine the cultural impact of urological robotic surgery within hospitals in the NHS. This study will determine the cultural impact of implementing urological robot-assisted surgery across hospitals within the NHS.

**Method:** After obtaining ethical approval, a series of semi-structured interviews were conducted. Participants included five consultant urologists and three nurses from the Urology department at St George's Hospital, London, along with one previous Managing Director of a NHS London Hospital Trust. Each interview lasted 30 minutes and was audio recorded before being transcribed verbatim. Thematic analysis was subsequently conducted to identify higher themes.

**Result:** Six higher themes were identified from the interviews including: training in robotics, perceived challenges with robotics, benefits of robotics, team dynamics, managerial implications and future scope.

**Conclusion:** This study shows that the successful implementation of novel robotic technology requires a well-prepared team, robust training programme and clear leadership. Hospitals must have an integrated managerial support system to deal with any emerging challenges and to oversee the process of organisational culture change. Whilst the future scope for robotics is vast, further qualitative studies are needed to assess the impact this technology will have within urological surgery.

**Take-home message:**
The successful implementation of novel robotic technology requires a well-prepared team, robust training programme and clear leadership. Hospitals must have an integrated managerial support system to deal with any emerging challenges and to oversee the process of organisational culture change.

### O84    BLADDER DRAINED PANCREAS TRANSPLANTS IN THE MODERN ERA

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**Introduction**: There has been ongoing debate over the optimal method of exocrine drainage from pancreas transplants for many years, with continued lack of consensus. There are clear advantages and disadvantages to each.

**Method**: We performed a retrospective analysis of 51 consecutive pancreas transplants in a single centre over a 7-year period (2009-2016). We analysed short-term outcomes and rates of complications.

**Result**: There were 19 enteric-drained (ED), 32 bladder-drained (BD). Median length of stay was 22 days ED vs 26 days BD (p=0.24, M-W u). Mean relaparotomy rate was 0.53 (0-3) ED, 0.78 (0-4) BD (p=0.39, t-test), the most common reason for relaparotomy was bleeding in both groups. 2 patients from BD group have had enteric conversion due to intolerable urinary symptoms, time-lapse to conversion were 6 months and 13 months. A further 2 BD patients have known urinary symptoms, but do not wish to have enteric conversion. There have been 4 anastomotic leaks (2 ED, 2 BD). We found no significant difference in graft survival (log rank=0.27) or patient survival (log rank=0.10) between the two groups. Although the median graft survival was longer in BD group (1179 vs 761 days).

**Conclusion**: Our experience demonstrates that bladder-drainage of the exocrine pancreas is a safe option, with the advantage of the ability to non-invasively monitor for evidence of graft rejection or vascular compromise. This comes at the cost of potential urinary complications, at which point enteric conversion can be considered. Our data showed comparable graft and patient survival between the two groups.

**Take-home message:**
Outcomes from bladder-drained pancreas transplants is comparable to enteric-drainage. Therefore surgeon and centre experience together with patient factors should determine choice of procedure.

### O85    ROBOT ASSISTED LAPAROSCOPIC RADICAL CYSTECTOMY VERSUS OPEN RADICAL CYSTECTOMY – A COST COMPARISON

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**Introduction:** Robotics are a relatively new advancement in urological surgery. They aim to reduce rates of blood transfusion, complications and reducing hospital stays (LOS) and operative time (OT), while making operations more ergonomic and precise. Little has been published to look at the cost of robot-assisted laparoscopic radical cystectomy (RALRC), particularly in the context of the NHS. This study aims to derive the cost incurred by the NHS when conducting RALRC versus open radical cystectomy (ORC).

**Method:** After ethics review board approval, a RALRC procedure was observed. Patient outcomes and costs were recorded, including disposables, capital equipment, mean hospital stay LOS and mean OT. Using actual cost data, a decision tree model was used to determine costs associated with peri-operative complications. Monte Carlo analysis was performed to assess which variable had the largest impact on cost overall. Breakeven points were calculated using multivariate sensitivity analysis.

**Result:** RALRC typically costs £11,880, and is 58.5% more expensive than ORC. The largest determinants of this cost are, in order of importance, OT, hospital volume and hospital LOS. No realistic scenarios were identified whereby RALRC would become the cheaper procedure. The cost of RALRC decreases to £8,954.32 when OT is 3 hours, hospital LOS is 8 days, and the hospital case volume is 300 cases/year.
**Conclusion:** On cost alone, RALRC cannot be recommended over ORC. Further studies must determine whether the increased cost can be justified by improved patient quality of life.
**Take-home message:**
On cost alone, RALRC cannot be recommended over ORC. Further studies must determine whether the increased cost can be justified by improved patient quality of life.

## O86    BK VIRUS NEPHROPATHY: A SINGLE-CENTRE RETROSPECTIVE CASE SERIES

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**Introduction**: BK virus is a polyoma virus that can lead to early graft loss in kidney transplant recipients. We aimed to review our own series of patients who had a diagnosis of BK virus nephropathy(BKVN).
**Method**: Electronic data was reviewed for all our patients since 2009 testing positive for BK virus in blood or urine.
**Result**: There were 17 patients with at least one positive BK virus result in either serum or urine. These patients all had at least >25% rise in serum creatinine. Of these only 8(47%) were biopsied but 7/8 showed the characteristic features of BKV nephropathy with SV40 staining. Various strategies were used for treatment exclusive of the level of viraemia or deterioration in creatinine. These included conservative(no change) in 5 cases (29%), reduction in MMF n=8(47%), reduction in Tacrolimus n=2(12%), Ciprofloxacin n=1(6%) and combined MMF reduction with Cidofovir n=1(6%). There was no statistical difference in outcome for graft loss(p=0.824), higher creatinine(p=0.252), viraemia clearance (p=0.824) or rejection (p=0.949) between those conservatively managed or treated. There was an increasing trend towards acute rejection in the treated group(p= 0.09) most likely due to the reduction in immunosuppression. Four(23.5%) patients recommenced dialysis a mean of 30 months from diagnosis of BK virus nephropathy.
**Conclusion** : BK virus leads to a deterioration in graft function and should be considered in any patient with early graft dysfunction in the absence of acute rejection. There is an urgent need to develop more specific anti-viral therapies for BKV nephropathy.
**Take-home message:**
BK virus to be considered as a cause of kidney graft dysfunction in the absence of rejection.

## O87    THE EFFECTS OF A POLYETHYLENE GLYCOL BASED PERFUSATE DURING RENAL EX-VIVO NORMOTHERMIC PERFUSION

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**Introduction:** Polyethylene glycol (PEG) added to the perfusate during ex-vivo normothermic kidney perfusion (EVKP) may reduce the effects of ischaemic-reperfusion (IR) injury by upregulating haem-oxygenase-1 (HO-1).
**Method:** Porcine kidneys were exposed to ten minutes of warm ischemia, followed by 17h of cold storage (CS). After CS, kidneys underwent one hour of EVKP with oxygenated, leucocyte depleted blood at 37°C (Control n=6). In the treatment group, PEG 35,000 1g/L was added to the blood (n=4). Following EVKP, the kidneys were reperfused with oxygenated whole blood for assessment of function and urinary concentrations of HO-1.
**Result:** No significant difference in mean renal blood flow (RBF) was observed between the groups during EVKP (control, 37.7±7.0 ml/min/100g vs PEG, 35.1±11.9 ml/min/100g, P=0.7131). HO-1 levels, although numerically higher in the control group during EVKP, were not significantly different (control, 65±42 ng/ml vs PEG, 30±21 ng/ml, P=0.3047). Following reperfusion, there was no significant difference in the RBF (control, 21±11 ml/min vs PEG, 24±11 ml/min, P=0.6618). HO-1 levels were numerically higher, although not significantly, in the control group at one hour (95±12 ng/ml vs 72±37 ng/ml, P=0.3874) and three hours reperfusion (98±5 ng/ml vs 74±37 ng/ml, P=0.3534).
**Conclusion:** In conclusion, the addition of PEG during EVKP had no significant effect either on HO-1 levels or renal function. This study has demonstrated the addition of PEG to perfusate had no adverse effects on porcine kidneys. Future studies should investigate the effects of different concentrations of PEG in the perfusate in relation to reducing IR injury.
**Take-home message:**
The addition of Polyethylene glycol to the perfusate during ex-vivo normothermic kidney perfusion had no significant effect on renal function

## O88    ROBOT-ASSISTED LAPAROSCOPY IN UROLOGY - A LITERATURE REVIEW

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**Introduction:** The da Vinci Surgical System (Intuitive Inc.) represents a major advancement in urological surgery. Doubt remains as to whether a robot-assisted approach provides greater benefits than non-robot-assisted methods. This study reviewed the literature to assess the clinical efficacy, safety, learning curves and cost-effectiveness of robot-assisted prostatectomy (RALP), cystectomy (RALRC) and partial nephrectomy (RALPN), compared to non-robot-assisted approaches.

**Method:** Four databases were searched between 01/04/2011-01/04/2016: PubMed, Medline, Cochrane library (including NHS EED) and the Health Management Information Consortium (HMIC). A total of 4,566 initial papers were identified. After exclusion by abstract and then full-text, 56 prostatectomy, 33 cystectomy and 17 partial nephrectomy papers were included in the review.

**Result:** Lower incidence of positive surgical margin in RALP vs. ORP. Comparable biochemical recurrence rates in RALP vs. ORP and LRP. Improved functional outcomes in RALP vs. ORP and LRP. Learning curve analyses showed improvements in clinical outcomes with increasing surgical experience. Reduced EBL, complication rates and lower incidence of blood transfusions in RALRC vs. ORC. Lower rate of perioperative complications, shorter LOS and reduced EBL in RALPN vs. OPN. Shorter learning curve in RALPN vs. OPN. All robotic procedures more expensive. RALP remains cost-effective in high-volume centres; insufficient cost-effectiveness data for RALRC and RALPN.

**Conclusion:** Current evidence indicates robotic surgery is clinically effective and safe in prostatectomy, cystectomy and partial nephrectomy. RALP is cost-effective in high-volume centres, but further studies are required to determine if RALRC and RALPN are better than their non-robotic counterparts.

**Take-home message:**
RALP is cost-effective in high-volume centres, but further studies are required to determine if RALRC and RALPN are better than their non-robotic counterparts.

## O89    A PILOT TRIAL OF A COMPUTER BASED CANCER FOLLOW UP IN TWO TEACHING AND UNIVERSITY HOSPITALS; IS SAFE AND VALID

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**Introduction:** Prostate cancer is a leading cause for cancer related mortality in the UK. Despite its rising incidence, there has been improvement in the disease survival due to advancement in diagnosis and treatment. This has led to exponential growth in the disease follow up domain with a call for safe, cost effective models to meet this challenging health care demand. In this study, we have developed an artificial intelligence based model to provide a specialist follow up which can be delivered in both primary and secondary care.

**Method:** A clinical decision support system (CDSS) was developed by human expert knowledge acquired and validated in 2 previous studies. This knowledge was structured into a rule based format for clinical problem solving. This model was then applied in 2 UK teaching and university hospitals to review patients post treatment with an aim to identify patients with disease recurrence or treatment failure. These patients' data (n= 200) were then reviewed by a Urology consultant (blinded from the CDSS) and the agreement was calculated by kappa statistics for validation.

**Result:** The cases analysis demonstrated prevalence of radiotherapy treatment in this group (n=128) then surgery (n=25), watchful waiting (n=24), and hormonal ablation (n=23). The consultant identified 12% to have potential disease recurrence. The overall blinded agreement between the CDSS and consultant was 0.79 indicating high validity.

**Conclusion:** CDSS led follow up is valid and can provide a safe and possibly cost effective follow up for patients with prostate cancer in the primary or secondary care.

**Take-home message:**
Artificial intelligence based models are highly versatile and their implementation in health care can increase efficiency, safety and reduce cost.

## O94    THE INCIDENCE OF FLUOROQUINOLONE RESISTANCE IN MEN WITH POST-TRUS BIOPSY SEPSIS: A RETROSPECTIVE AUDIT

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**Introduction**: Trans-rectal ultrasound (TRUS) guided biopsies are a commonly performed urological procedure. Infective complications can be life-threatening. Over the past decade, there have been increasing reports of fluoroquinolone and multi-drug resistant Escherichia coli strains. We aimed to establish local complication rates with particular attention to cases of fluoroquinolone-resistant urosepsis.

**Method**: A retrospective analysis of 657 consecutive patients undergoing a TRUS biopsy over a one year period (between 1st April 2014 and 31st March 2015) was performed at our centre. Outcomes assessed included 30 day re-admission rate, cause of re-admission, length of hospital stay and mortality.

**Result**: Mean age was 66.6 years with 76% of patients undergoing first TRUS biopsy. Indications for biopsy were raised PSA (43%), abnormal DRE (10%), raised PSA and abnormal DRE (32%), active surveillance programme (12%), MRI (4%). The 30-day complication re-admission rate was 2.13%; 0.76% for urinary tract infection/sepsis, 0.46% for bleeding and 0.91% for urinary retention. There were 5 episodes of post-TRUS sepsis. In 3 cases, no causative organism was identified on cultures. In 2 cases, resistant strains of Escherichia coli were cultured (amoxicillin resistant n=1, ciprofloxacin resistant n=1).

**Conclusion**: Our local complication rate was lower than the national average. Whilst the absolute rate of fluoroquinolone-resistant sepsis was low, the one case reported comprised 20% of all post-TRUS sepsis cases.

**Take-home message:**

Antibiotic resistance is a growing threat to healthcare providers. Local resistance rates must be monitored to ensure effective surgical prophylaxis.