

Selected Abstracts Presented at the 14th International Congress of Iranian Organ Transplantation Society (IRSOT)

Does Urine Culture Result Predict Ureter Stent Culture Result in Patients with Allograft Kidney Transplantation?

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Background: Inserting ureteral stent for allograft ureter during anastomosing reduces the complication rate of the procedure. It is recommended by some experts but stent is a foreign body and may cause some complications including infection.

Objective: To determine the correlation between urine cultures taken one week post-transplantation (at the time of the Foley catheter removal), four weeks post-transplantation (at the time of ureteral catheter removal), and ureteric stent bacteria in allograft kidney.

Methods: 61 kidney transplant recipients who underwent transplantation at our center between 2012 and 2015, were studied. The participants included 34 males and 27 females aged between 12 to 60 years. They were operated by the same team and received the same immunosuppressive and antibiotic regimens. All the information with details of urine and stent cultures were collected and analyzed. Four weeks post-transplantation, the ureter stent was removed and cultured. The result of stent culture was compared with the urine culture sampled one week post-transplantation (during removal of urethral the Foley catheter from the bladder) and also with urine the culture of the sample taken before removing the ureter stent four weeks post-transplantation.

Results: In 18 (7 female and 11 male) patients the ureter stent culture was positive. In only one patient the result of urine culture before ureter stent removal at four weeks post-transplantation, was positive. In 12 patients the result of the urine cultures at the time of removing urethral Foley catheter (one week post-transplantation) and ureter stent culture were positive; in 18 (11 female and 7 male) patients, urine culture at the time of removing urethral Foley catheter (one week post-transplantation) was positive but none had a positive ureter stent culture.

Conclusion: Four weeks post-transplantation, 3% of ureteral stent cultures were positive but concomitant urine cultures were negative, which means urine culture did not indicate bacteria of ureteral stent. However, there was correlation between urine culture during removing urethral Foley catheter from the bladder and ureteral stent culture.

Liver Transplantation for End-Stage Liver Disease Caused by Autoimmune Hepatitis and Overlap Syndrom: Long-term Follow-up

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Background: Liver transplantation is the treatment of choice for end-stage liver disease caused by various etiologies. The three major types of immune liver disease are primary sclerosing cholangitis (PSC), primary biliary cirrhosis (PBC), and autoimmune hepatitis (AIH). Variant types are called “overlap syndrome” but there is no consensus on the definition and diagnosis of this syndrome.

Methods: In this study we analyzed post-operative complications (acute and chronic rejection, biliary complication, recurrence after liver transplantation) of patients with autoimmune hepatitis and overlap syndrome who underwent liver transplantation in Shiraz Transplant Center between September 2000 and April 2008. Patients were labeled as overlap syndrome according to Paris criteria.

Results: The median follow-up of patients was 105 (range: 82–172) months. Long-term follow-up of 31 patients with AIH and 17 with overlap syndrome, revealed that chronic rejection and biliary complications after liver transplant are significantly more common in patients with overlap syndrome. In this study there was only one case of documented recurrence of AIH post-transplantation.

Conclusion: In patients with overlap syndrome, post-operative evaluations should be more intensive to achieve acceptable results in this large group of patients.

Ex-vivo Resection and Small-Bowel Auto-transplantation for the Treatment of Tumors at the Root of the Mesentery

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Background: Tumors involving the root of the mesentery are generally regarded as “unresectable” with conventional surgical techniques. Resection with conventional surgery may lead to life-threatening complications in these patients. *Ex-vivo* resection and auto-transplantation avoid excessive bleeding and prevents ischemic-related damage to the small intestine and other organs.

Objective: To share our experience of *ex-vivo* resection of the tumors with involvement of small-bowel mesentery followed by small-bowel auto-transplantation.

Methods: Medical records of all the patients who underwent *ex-vivo* resection and auto-transplantation at our center were retrospectively analyzed.

Results: The most common indication for the procedure in our series was locally advanced pancreatic carcinoma. Our survival rate was 50% with a mean±SD follow-up of 10.1±9.8 (range: 0–26) months. Causes of early in-hospital mortality were multi-organ failure, sepsis, and cerebrovascular accident. Recurrence of disease was noted in one patient while another patient developed hepatic metastasis after 20 months of

surgery.

Conclusion: *Ex-vivo* resection of the tumor and auto-transplantation is the surgical treatment of choice for the locally advanced abdominal tumors involving the root of the mesentery.

Angioplasty and Stenting of the Transplanted Renal Artery Stenosis: a Single-Center Experience

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Background: Transplanted renal artery stenosis (TRAS) is a well-known potentially curable cause of post-transplantation arterial hypertension, allograft dysfunction, and graft loss. Percutaneous transluminal angioplasty and stenting are relatively less invasive approaches for the treatment of post-transplantation TRAS.

Methods: From March 2014 to March 2015, 154 patients underwent kidney transplantation (113 deceased and 41 live donors). 4 patients (2 men and 2 women) who had advanced diabetes, vascular access problem, re-transplantation and obesity, developed renal and iliac artery stenosis and stent placement was performed. In these patients, blood pressure, body weight, urine output and Doppler ultrasound parameters were regularly evaluated pre-operatively and daily for one month after angioplasty. Angioplasty was conducted for 2 patients on the second post-operative day; the other 2 patients underwent the procedure 10 days after their transplantations.

Results: The mean age of the 4 patients (2 deceased and 2 live donors) was 42 (range: 13–63) years. Serum creatinine decreased after angioplasty in 3 patients below 1.8 mg/dL at discharge. One patient needed dialysis after angioplasty (the serum creatinine decreased to 1.2 mg/dL after three weeks). No patient returned for dialysis after the discharge.

Conclusion: Percutaneous transluminal angioplasty and stenting are safe and effective procedures to relieve renal artery and/or iliac stenosis. High risk patients with complications such as advanced diabetes, difficult vascular access and re-transplantation should undergo the procedure in high-tech centers equipped with Cath. Lab. and well-experienced endovascular interventionists to prevent graft loss.

The Prognostic Value of Serum Fibroblast Growth Factor 23 (FGF23) Level for the Prediction of Renal Function after Renal Transplantation

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Background: The level of fibroblast growth factor 23 (FGF23) may be considered a prognostic factor for assessing renal function in regulating components of phosphate and vitamin D hemostasis.

Objective: To evaluate the prognostic value of FGF23 level for the prediction of renal function after renal transplantation.

Methods: 15 consecutive candidates for renal transplantation in renal transplantation ward of Shariati Hospital in 2013 were enrolled in this study. To assess renal function status, the MDRD formula and isotope scan were used. The study end-point was to assess the level of FGF23 and other factors involving calcium and phosphorus metabolism before, 3 months, and 12 months after transplantation and also to determine the

role of FGF23 in prediction of post-operative renal function.

Results: The mean±SD level of FGF23 was 839.51±694.56 RU/mL at the baseline; it reduced to 44.31±22.01 (p=0.01) and 20.13±36.50 (p=0.02) RU/mL 3 and 12 months after the initial assessment, respectively. The levels at the 3 and 12 months were not significantly different. The baseline level of FGF23 was higher in patients with higher GFR, in older patients, in male patients, in those with diabetic nephropathy, and in those with acceptable renal function than in patients who suffered transplant rejection. Patients who received kidney from a living donor had higher FGF23 level than those who received kidney from cadavers. However, level of FGF23 at the baseline was lower in patients with higher phosphorus, higher calcium, and higher PTHA level.

Conclusion: The level of post-operative FGF23 is an important marker for secretion of phosphorus from kidneys emphasizing the central role of FGF23 to regulate calcium and phosphorus metabolism after a successful renal transplantation.

Home Spirometry: Assessment of Patient's Compliance and Satisfaction and its Impact on Early Diagnosis of Pulmonary Symptoms in Post-Lung Transplantation Patients

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Background: Telemedicine is useful in monitoring patients and in particular those suffering from chronic illnesses such as lung transplant recipients.

Objective: To assess the effect of telespirometry in monitoring lung transplant recipients, and if it affects patients' satisfaction, and compliance.

Methods: This prospective cohort study was conducted on 15 lung transplant recipients. The patients provided physicians with data from spirometry as well as their clinical respiratory symptoms via SMS messages. In cases where spirometry results or clinical symptoms required follow-up, the monitoring physician contacted the patient according to guidelines and gave appropriate instructions.

Results: Qualitative assessment of satisfaction showed that sense of increased support from medical staff was rated highest (92.9%). Compatibility study between clinical symptoms and FEV₁ showed a strong correlation between both clinical symptoms and FEV₁ that did not require follow-up.

Conclusion: Telespirometry is an efficient method for monitoring lung transplant recipients. It leads to patients' satisfaction, compliance, adherence to the study and sense of security. Nevertheless, for optimal implementation of this method, thorough training of both medical staff and patients is required.

Multivisceral Transplantation for the Treatment of Intra-abdominal Tumors

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Background: Some intra-abdominal or retroperitoneal tumors such as low-grade slow-growing malignancies may seem unresectable due to major vessel encasement or presence of intra-abdominal dissemination. However, the slow growth rate and to some extent long life expectancy of the patients urge us to find some strategies to cure the patients or at least achieve tumor remission or symptom palliation. *En bloc* resection, followed by multivisceral or liver-sparing modified multivisceral transplantation has recently been used for the treatment of these patients.

Methods: Between May 2010 and October 2012, 3 multivisceral and 3 modified multivisceral transplantations were performed in 6 patients (mean age: 32, range: 14–55 years) with some slow-growing intra-abdominal malignancies (2 neuroendocrine tumors, 2 gastrointestinal stromal tumors, 1 desmoid tumor, and 1 low-grade sarcoma).

Results: All patients survived the procedure. One patient died of pancytopenia 2 months after transplantation; another died with pulmonary emboli 4 months post-transplantation. The remaining 4 patients are alive without any evidence of disease recurrence.

Conclusion: Although large intra-abdominal desmoid tumors, well-differentiated neuroendocrine tumors, and gastrointestinal stromal tumors are slow growing, they tend to invade locally, especially to the mesenteric root and/or celiac axis and other abdominal viscera. Complete resection followed by multivisceral transplantation could be a therapeutic option for these advanced tumors.

Multivisceral and Small Bowel Transplantation at Shiraz Organ Transplant Center

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Background: Multivisceral transplantation was initially done in animal models to understand its immunological effects. Later on, it has been considered a salvage procedure for unresectable complex abdominal malignancies in human beings. With advancement in surgical techniques, availability of better immunosuppressive drugs, and development of better post-operative management protocols, outcomes have been improved after these complex surgical procedures.

Objective: To analyze and report results of multivisceral, modified multivisceral, and small bowel transplantations done at Shiraz Organ Transplant Center, Shiraz, southern Iran.

Methods: Medical records of all patients who underwent multivisceral, modified multivisceral, and small bowel transplantations were retrospectively analyzed.

Results: There were 18 patients. The most common indications for the procedure in our series were unresectable carcinoma of pancreas followed by short bowel syndrome. 10 patients were alive after a median follow-up of 8.7 (range: 3–32) months. The remaining 8 patients died post-operatively, -mostly from septicemia.

Conclusion: Multivisceral and small bowel transplantations are promising treatments for complex abdominal pathologies.