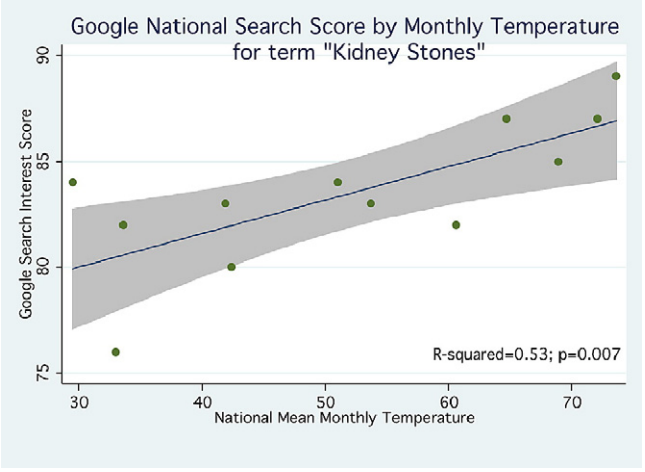
METHODS: The Google Insights for Search analysis tool was used to study searches for terminology related to kidney stones, with each query returning a Web Search Interest Score based on search frequency relative to total search volume. Scores for the most common term, "kidney stones", were compiled by location and time parameters and compared with published weather and stone prevalence data. Linear regression analysis was performed to determine the association of search interest score with known epidemiological variations in kidney stone disease including latitude, temperature, season, and state. The frequency of related search terms was categorized by theme and qualitatively analyzed.

RESULTS: Search interest score was significantly correlated with established kidney stone epidemiologic predictors. Score correlated with state latitude (R-squared=0.25; p<0.001), with state mean annual temperature (R-squared=0.24; p<0.001), and by state prevalence (R-squared=0.25; p<0.001). National score was strongly correlated with average US temperature by month (R-squared=0.54; p=0.007). Search term ranking by category suggested that internet users are most interested in diagnosis, followed by etiology, infection related to stones, and treatment options. Trend data indicates infection and stones, followed by gender and stones. as having the most rapidly increasing interest among internet users.

CONCLUSIONS: Geographical and temporal variability in kidney stone incidence can be identified in a statistically significant manner through the analysis of internet search trends. Internet search trend data appears to be a particularly useful tool for studies in which geographic and seasonal variations are expected. With internet search trends analysis, data that would otherwise require large studies are instead self-reported by internet users in real time. Internet search trend data may have broader applications for epidemiologic research.



Source of Funding: None

Transplantation & Vascular Surgery: Renal Transplantation, Vascular Surgery

Moderated Poster 73

Wednesday, May 18, 2011 **1:00 PM-3:00 PM**

2242

APPROPRIATE DURATION FOR ASSESSMENT OF RENAL FUNCTION AFTER LIVING DONOR NEPHRECTOMY

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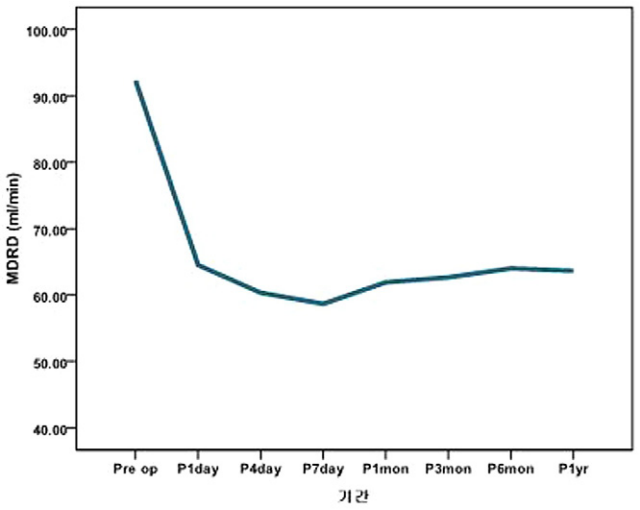
INTRODUCTION AND OBJECTIVES: As the demand for living donor kidney transplantation continues to increase, postoperative renal function of donors continues to be an important consideration. The objectives of this study were to investigate postoperative stability of renal function and determine an appropriate follow-up period following living donor kidney transplantation.

METHODS: From March 2006 to July 2010, 419 patients underwent living donor nephrectomy in a single hospital. eGFR using the Modification of Diet in Renal Disease (MDRD) formula was calculated preoperatively and postoperatively (at postoperative days 1, 4, 7, and 1, 3, 6, and 12 months). Linear mixed model analysis was used to determine when renal function had stabilized. To estimate an appropriate renal function follow-up period, patients were divided into those with MDRD <60 ml/min (chronic kidney disease [CKD] stage 3 and greater) and those with MDRD >60 ml/min (normal group) at 6 months after surgery. The recovery pattern of renal function was analyzed by calculating the rate of change of postoperative MDRD compared to preoperative MDRD (%MDRD).

RESULTS: Within the first month after the operation, eGFR levels differed significantly between the groups (at postoperative days 1, 4, and 7; p<0.001, p=0.006, and p=0.002, respectively). From 1 to 12 months after surgery, eGFR levels did not statistically differ between the groups (postoperative 3, 6, 12 months; p=0.125, p=0.275, p=0.144, respectively). Although %MDRD was significantly higher in the normal group from 1 to 6 months after surgery (P<0.05), at 12 months, %MDRD did not differ significantly between the normal and CKD groups (69.06¡¾9.28% vs. 70.14¡¾8.38%, respectively). In the normal group, there was a decreasing trend of %MDRD between 6 and 12 months, although the difference was not statistically significant. This means that even patients with a normal MDRD level 1 year after surgery require further follow-up.

CONCLUSIONS: Renal function began to stabilize 1 month after surgery. Although the follow-up period in this study was limited to 1 year after living donor nephrectomy, the results reveal that even patients with normal eGFR levels should be followed for more than 1 year to determine the fate of renal function after donor nephrectomy.



Source of Funding: None

2243

TRANSURETHRAL RESECTION OF THE PROSTATE FOR BLADDER OUTLET OBSTRUCTION DUE TO BENIGN PROSTATIC HYPERPLASIA IN KIDNEY TRANSPLANT RECIPIENTS: LONG-TERM UROLOGICAL AND RENAL FUNCTIONAL OUTCOMES IN A PROPECTIVE STUDY

Alessandro Volpe, Michele Billia, Matteo Vidali, Giansilvio Marchioro, Marco Quaglia, Stefania Ranzoni, Elisa De Lorenzis, Piero Stratta, Carlo Terrone, Novara, Italy*

INTRODUCTION AND OBJECTIVES: The results of TURP after renal transplant have been described mainly in retrospective series and most studies on this topic focused only on urological

outcomes. Aim of this prospective study was to confirm safety and efficacy of TURP in RT recipients and to assess the impact of the procedure on long-term graft function.

METHODS: From January 1998 to July 2009, 696 patients underwent RT at our centre. Overall, 103 (22.8%) males developed bladder outlet obstruction (BOO) symptoms after RT and were treated with ¦Á-blockers and dutasteride for at least 6 months. Indications to TURP were: PVR >100 ml, Qmax ¡Ü 10 ml/sec, increased or stable IPSS, urinary retention requiring indwelling urethral catheter or increasing serum creatinine levels likely due to BOO.

Only patients (n=32) with a minimum follow up of 24 months were included in the analysis in order to evaluate long-term outcomes. Serum PSA, IPSS, Qmax at uroflowmetry, PVR, Hb, proteinuria and serum creatinine were determined before TURP and 1,6, 24 and 48 months after the procedure. Complications were also recorded. Change of the above mentioned variables over time was assessed in order to evaluate the efficacy of the procedure and its effects on long term graft function. Statistical analysis was performed with SPSS v.15.

RESULTS: Median age was 58 (40–76) years. Median operative time, catheterization time and hospital stay were 41 (30–60) minutes, 2 (2–4) days and 3 days (2–6), respectively.

Seven (20%) complications were observed. No patient required a second TURP.

The table shows preoperative and post operative variables 1,6,24,48 months after TURP. Qmax, PVR and IPSS improved significantly postoperatively and the improvement was maintained at 48 months. Serum creatinine level decreased 1 and 6 months after TURP and did not increase significantly at long term follow-up.

CONCLUSIONS: TURP in RT recipients is a safe and effective procedure and allows an early significant improvement of graft function that remains stable up to 48 months.

Table 1.

Variable	Preoperative	Postoperative (1 month)	Postoperative (6 months)	Postoperative (24 months)	Postoperative (48 months)	P
IPSS	15 (12-19; 11-20)	4* (0-5; 0-6)	-		-	<0.001
Peak flow rate (ml/s)	9.5 (7.0-10.0; 4.3-27.0)	21.0* (18-24; 16-32)	20.5*# (18-24; 16-32)	19.5*# (17-24.7; 17-33)	20*# (16.5-22; 15-44)	<0.001
Post-void residual (ml)	100 (100-150, 70-400)	0* (0-0; 0-40)	0*# (0-0; 0-0)	0*# (0-0; 0-50)	0*# (0-0; 0-50)	<0.001
Haemoglobin (g/dl)	11.8 (9.9-13.2, 8.9-16.6)	11.5* (10.1-13.4, 8.3-14.8)	12.0*# (11.5-14.2, 9.9-16.0)	12.8*# (11.7-14.5; 9.5-16)	13.0*# (12.0-14.0, 11.0-16.6)	<0.001
Creatinine (mg/dl)	2.4 (1.85-2.77; 1.2-8.8)	1.9* (1.5-2.35, 1.0-3.1)	1.7# (1.2-2.1, 1.0-3.0)	2# (1.4-2.3; 1.0-2.8)	2# (1.5-2.3, 0.8-2.4)	<0.001

Source of Funding: None

2244

EGFR AND ONE-HOUR BIOPSY: BETTER PREDICTORS OF DECEASED KIDNEY TRANSPLANTS WITH USING IN-SITU-COOLING DOUBLE-BALLOON CATHETERS SYSTEM

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INTRODUCTION AND OBJECTIVES: The worldwide shortage of deceased donor kidneys for transplantation has become a serious issue in the past decade and marginal donor kidneys have been studied. However, both the availability and feasibility of kidneys from deceased donors is still unclear. The aim of the present study was to estimate availability of deceased donor kidney with using our in-situ-cooling system, analyze donor one-hour biopsy, and find better evaluation method to estimate donor kidney function rather than using donor Cr.

METHODS: We studied 129 deceased renal transplant recipients who received kidneys from non-heart-beating donors beginning in 1984. Cyclosporine or Tacrolimus were given to all transplants. Those donors were in Maastricht Donor Categories III and IV and, in order to minimize warm ischemic kidney damage, we performed in situ cooling with specially designed double-balloon catheters. One-hour biopsies were analyzed with Remuzzi's evaluation system.

RESULTS: The average donor Cr levels at admission were 0.3–2.1mg/dl (Average 1.0) and those level before death were 0.3–15.9 (Average 2.7). The average recipient Cr levels at discharge were 0.3–5.3 (Average 1.8). Although the average donor Cr levels before death were high levels, transplanted kidneys had good function with using our catheter system.

To define the best measure of kidney function after transplant, recipients were classified according to estimated donor glomerular filtration rate (eGFR) at discharge: <25 ml/min/1.73 for the poor function group (n=32) and >25, the good function group (n=95). There was no statistically significant difference in Cr levels of donor (at admission and before death) between those groups. And both groups had no statistically significant difference in ischemic time of organ procurements. However, the good function group had higher eGFR levels at admission to the hospitals than the poor function group (p=0.005), although there was no statistically significant difference in eGFR levels before death. Pathologically, the good function group had less glomerular global sclerosis, tubular atrophy, and arterial/arteriolar narrowing than the poor function group in one-hour biopsies. (p=0.0000001, 0.003, 0.0002) . Histological scores of interstitional fibrosis was not associated with kidney function.

CONCLUSIONS: In conclusion, our kidney transplants had excellent renal function with double balloon catheter system. Although donor Cr levels were not a useful measurement for our analysis, eGFR was and should be used for donor evaluation.

Source of Funding: None

2245

CONTRAST-ENHANCED ULTRASONOGRAPHY (CEUS) FOR SOLID AND COMPLEX CYSTIC LESIONS ASSESSMENT IN RENAL TRANSPLANTED RECIPIENTS (RTR) WITH ACQUIRED CYSTIC KIDNEY DISEASE (ACKD): PRELIMINARY EXPERIENCE

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INTRODUCTION AND OBJECTIVES: In order to decrease the use of contrast–enhanced CT and thus avoid the risk of contrast induced nephropathy in renal transplanted recipients (RTR) with Acquired Cystic Kidney Disease (ACKD), we prospectively studied the usefulness of Contrast-enhanced ultrasonography (CEUS) in characterizing complex cystic lesions and suspect solid masses.

METHODS: 138 consecutive RTR underwent routine US: 43 (31%) had ACKD. The 23 out of 43 ACKD patients (54%) with suspicious US underwent a CEUS and, if the suspicion was confirmed, a contrast-enhanced CT. All the patients with a suspicious US but without a CT confirmation were than followed by serial CEUS.

RESULTS: In the 23 patients studied by CEUS, 3 solid and 75 cystic lesions were identified. According to the Bosniak classification, 66 cysts were BI, 2 BII, 4 BIIF, 3 BIII. The 6 lesions classified as BIII or solid were further studied by CT. CT confirmed CEUS findings in 2 out of the 3 solid lesions (both RCC at histology). In the 3 lesions classified as BIII by CEUS, CT confirmed 1 lesion (RCC at histology) while other 2 were reclassified as BIIF. At follow up (range between 3 and 6 months) no lesion changes were observed. No patient suffered adverse reaction due to CEUS; no renal function deterioration was noticed.

CONCLUSIONS: CEUS has proven safe and has decreased by 78% the use of contrast-enhanced CT. This preliminary study is promising for the US characterization of suspicious lesions. Further patients and longer follow up are necessary to establish the potential role of CEUS in this setting.

Source of Funding: None