

ROLE OF URODYNAMIC STUDY (UDS) IN PRETRANSPLANT EVALUATION

Hypothesis / aims of study

Successful renal transplantation requires a recipient with a functional lower urinary tract (LUT). Urodynamic study (UDS) is performed selectively as part of LUT assessment. We assessed the findings and outcomes of UDS in this group of patients at our centre.

Study design, materials and methods

Retrospective review of potential renal transplant recipients referred for UDS (as per protocol requirements) at our centre between June 2006 and February 2011 was done.

Results

A total of 80 patients were included. All had diabetes mellitus, as transplant protocol requires this group of patients to undergo UDS.

Mean age was 51.4 years. 54 patients (67.5%) were male and 26 (32.5%) were female. 17 patients (21.3%) eventually received a renal transplant, of which 12 (70.6%) were living transplants and 5 (29.4%) were cadaveric. 1 patient had graft nephrectomy done 6 years post transplantation for chronic rejection. 7 patients died whilst being on the transplant waiting list.

Of the transplanted patients, 64.7% had abnormal UDS findings. These included decreased bladder compliance or small bladder capacity (29.4%), detrusor overactivity (47.1%) and bladder outlet obstruction (BOO) (41.2%). They were treated medically. Only 2 patients required operative intervention (both for BOO). 5 patients are on long term medical therapy for LUT dysfunction (alpha blockers and anti-cholinergics). There was no significant difference in post-transplant mean creatinine levels between patients with normal and abnormal UDS findings ($p=0.891$).

Interpretation of results

Patients who should be considered for a pretransplant UDS included those with diabetes mellitus, young patients, those who are unable to produce a good uroflow or have a high residual urine, patients with long-standing anuria and those with hydronephrosis detected on ultrasound.

A significant proportion of potential transplant recipients have abnormal LUT based on UDS. However, these findings do not preclude transplant and can be treated medically. Only a handful have severity requiring operative procedures post transplantation.

Concluding message

UDS plays an important role in selected renal transplant recipients as it allows early intervention to avoid complications of transplantation into an abnormal LUT and thus optimize long-term graft survival.

Table 1. Patient demographics and waitinglist outcomes

Variable	Values
Total no. of patients (n)	80
Male	54 (67.5%)
Female	26 (32.5%)
Age (years)	
Mean	51.4
Range	26-69
Mortality (n)	7 (8.75%)
Transplanted (n)	17 (21.3%)
Cadaveric	5
Living	12

Table 2. UDS results

UDS findings	All patients (n=80)	Transplanted (n=17)
Normal	32 (40.0%)	7 (41.2%)
Small capacity / decreased compliance	17 (21.3%)	5 (29.4%)
Detrusor overactivity (DO)	22 (27.5%)	8 (47.1%)
Bladder outlet obstruction (BOO)	25 (31.3%)	6 (35.3%)
Neurogenic bladder	1 (1.3%)	0

Table 3. Outcomes in transplanted patients

UDS findings	N	Latest mean Cr post-transplant (mg/dL)
Normal UDS4	6	121

High pressure bladder	6	131
BOO	4	117

References

1. Power RE, Hickey DP, Little DM. Urological evaluation prior to renal transplantation. Transpl Proc 36:2962, 2004
2. Karram G, Giessing M. Bladder dysfunction following renal transplantation is it predictable? Transp Proc 2011 43 (1):387

Disclosures

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