



OUTCOMES OF COMMERCIAL KIDNEY TRANSPLANTATION: SINGLE CENTER EXPERIENCE

Ali M. Shendi¹, Fahad Al Jabir², Mahmoud A. Alshantiti², Tariq Ali³, Dieter C. Broering³, Hassan Aleid³

1-Riyadh, Department of Kidney and Pancreas Transplantation, Saudi Arabia; 2-Internal Medicine Department, King Faisal Specialist Hospital and Research Center, Riyadh, 3-Department of Kidney and Pancreas Transplantation, King Faisal Specialist Hospital and Research Center, Riyadh

ABSTRACT

Introduction

- Commercial kidney transplantation is still actively attracting a significant proportion of patients with grave consequences. This is because standards of patient care are not being followed in most cases with sub-optimal transplant settings. We aimed to assess the complications and outcomes of the commercial transplants undergoing follow-up at our center and their impact on the healthcare system.

Methodology

- We conducted a retrospective review of adult Kidney transplant recipients (KTRs) who were transplanted commercially overseas from unrelated donors in the period from Jan 2020 to September 2023 and then presented to our Center for posttransplant care and follow-up.

Results

- Fifty-eight KTRs were identified, 40 men (69%) and 18 women (31%). The median age at transplantation was 36 years (Interquartile range (IQR) 30-45). All patients received their kidneys in Pakistan and presented on a median of day 5 (IQR 3-5) post-transplant. This was the first kidney graft for 45 (77.6 %) patients and the second for 13 (22.4%). Upon presentation, 35/58 (60.3%) indicated hospitalization for a median of 10 days (IQR 5-30 days), and over the 1st post-transplant year, 35/58 (79.3%) of the patients had at least one hospital admission with median total length of hospital stay (LoS) of 20 days (IQR 2-30). However, Most patients provided unreliable reports with insufficient data about the immunologic risk stratification, donor criteria, induction therapy and operative details. As such, we assumed all the transplants are high immunological risk. Empirical induction immunosuppression was then prescribed in 39.6% of the patients. Over the 1st post transplant year, a total of 47 biopsy-proven rejection episodes occurred in 34 KTRs (58.6%), 25 of them occurred in 23 patients (39.7%) within the 1st post-transplant month. 13 (22.4%) suffered delayed graft function. Patients were then followed up for a median of 14.5 months (IQR 7-17 months). Median creatinine at presentation was 161.5 mmol/l (IQR 117.25 – 440.5), which improved to 105 (89.75-125.5) by the end of 1st year and stabilized at 107 (86-126.75) mmol/l at the end of follow up (graph). 79.8% of the patients had at least one hospital admission over the 1st post transplant year with median length of hospital stay (LoS) of 23.5 days (IQR 7-32.5). Urinary tract infection (UTI) was the most frequent Infectious complication affecting 25/58 patients of whom 14 had recurrent UTI in addition to 4 patients having epididymo-Orchitis. Surgical site infection affected 11 patients. Newly acquired HCV infection was detected in 2 and HIV in one, while CMV viremia was detected in 10 KTRs. Malarial infection with plasmodium falciparum was encountered in 2 patients and Fungal infection in 10 (candida in 8 and aspergillosis in 1, undefined fungal 1). Urologic complications affected 39/58 patients with ureteric stenosis encountered in 10 and urinary leak in 7 patients. This indicated nephrostomy in 13 for urine leak and/or hydronephrosis and perinephric fluid drainage in 10 KTRs. The mortality rate was 5.17% (3/58), and the death-censored graft loss was 3/58 (6.9%) all had graft nephrectomy.

Conclusion

- Commercial kidney transplantation remains a significant health and ethical challenge. It entails high rates of DGF, rejections, infections, and urologic complications. This leads to a complicated post-transplant course with relatively long LoS and high rates of interventions, mortality, and graft loss. As such, it is imperative that all efforts be exerted to combat commercial transplant practices.

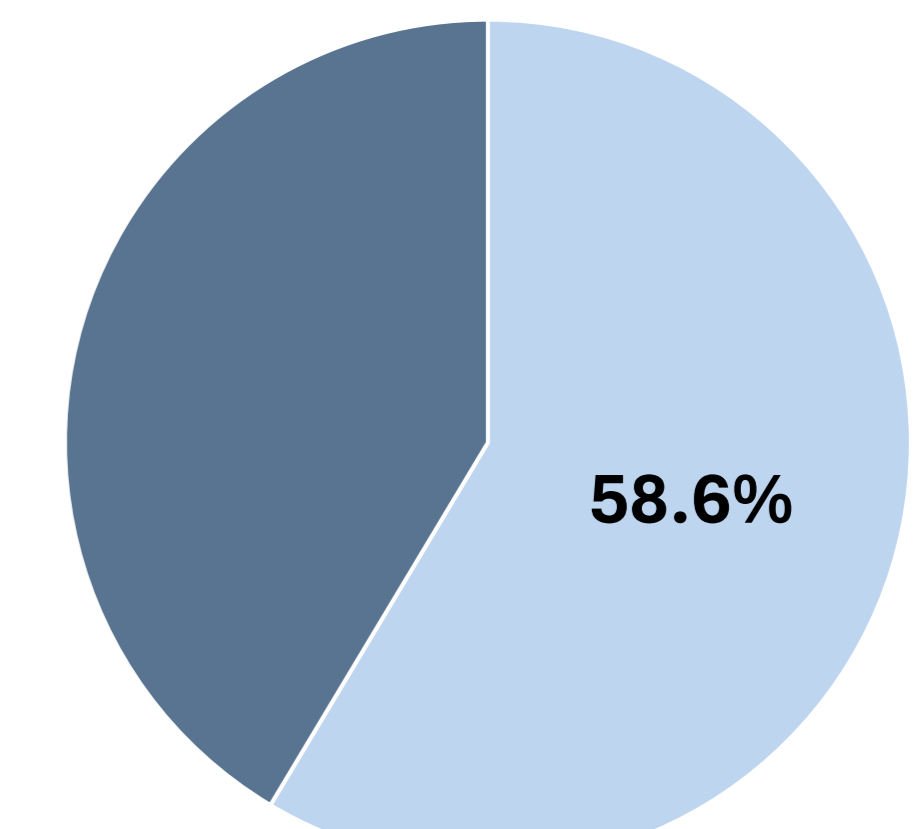
RESULTS

1 Immunologic complications:

Rejection episodes detected in commercial kidney transplant recipients during the 1st post transplant year

Rejection episodes over follow up by:	Within 30 days 25 in 23 KTRs (n)	After 30 days 22 in 17 KTRs (n)
-ACR:		
BANFF I	9	9
BANFF II	5	4
-AMR	6	1
-Combined ACR+AMR	2	0
-Borderline rejection	3	6
-Chronic active TCR	0	2

Percentage of biopsy-proven rejection episodes in total of KTR patients; over the 1st post transplant year

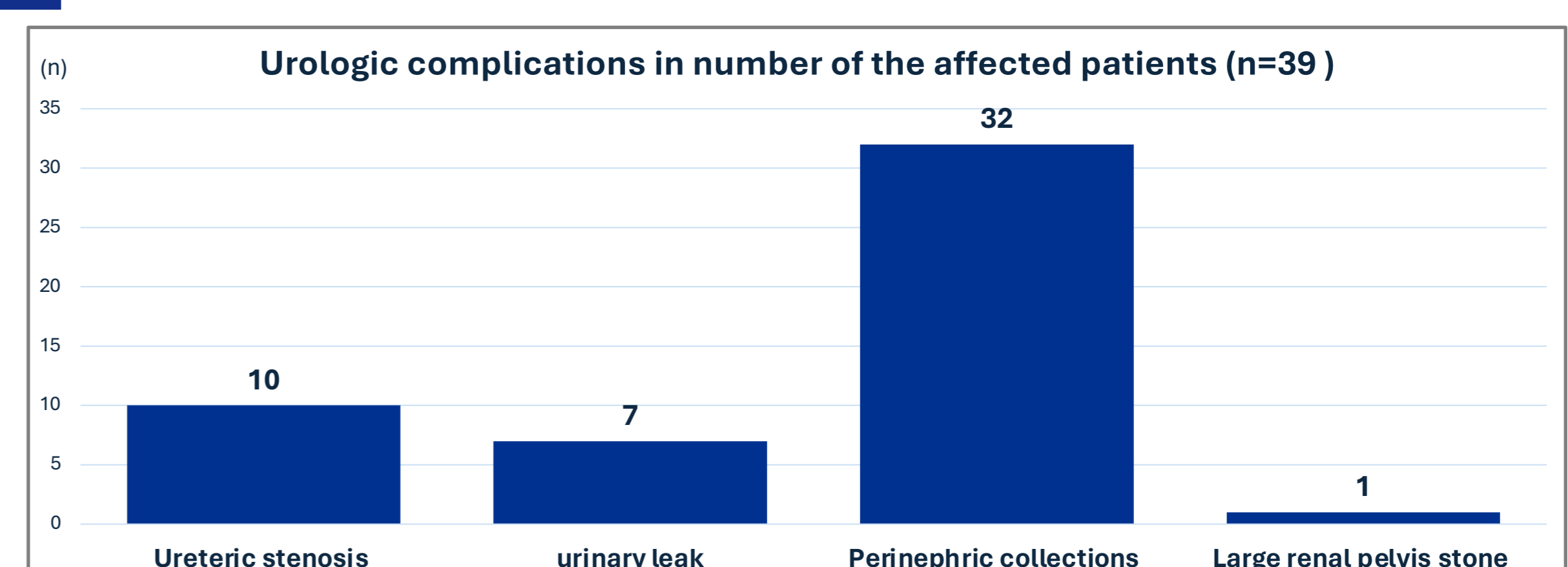


Most patients provided unreliable reports with insufficient data about the immunologic risk stratification, donor criteria, induction therapy and operative details. As such, we assumed all the transplants are high immunological risk. Empirical induction immunosuppression was then prescribed in 39.6% of the patients: 13 pulsed methyl prednisolone, 3 Anti-thymocyte globulin and 7 combined pulsed methyl prednisolone and Anti-thymocyte globulin. Apart from the above table of the variant types complications; TMA developed in a total of 5 patients (8.6 %) during the 1st post-transplant month, associated with AMR in one of them. And 13 (22.4%) patients suffered delayed graft function (DGF), at presentation.

2 Infectious complications:

Infection	Frequency
• Bacterial infections:	
Urinary tract infection	25 (43.1%)
Epididymo-Ochitis	4 (6.9 %)
Surgical site infection	11 (19 %)
Infected perinephric collection	7 (12 %)
• Viral infections	
HCV infection	3 (5.2 %)
HIV	1 (1.7 %)
CMV viremia (> 200 IU/ml)	10 (17.2 %)
COVID 19	10 (17.2 %)
• Fungal infection	
Aspergillus flavus	1 (1.7 %)
Undefined	1 (1.7 %)
Candida species	8 (13.8 %) (3 in urine, 2 in bronchoalveolar lavage and 3 from drained perinephric collection, 2 of them associated with candidemia)
• Plasmodium falciparum	2 (3.4 %)

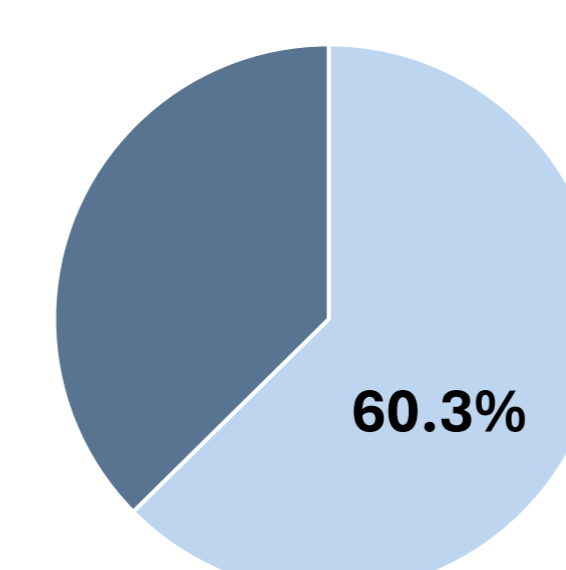
3 Urologic complications:



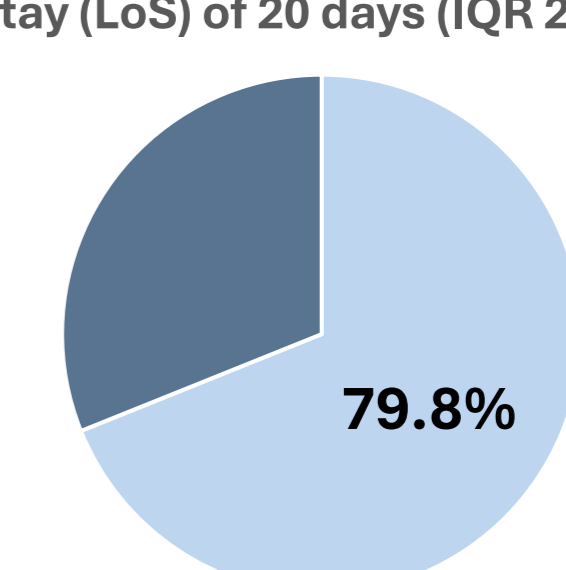
Overall, urologic complications affected 39/58 patients. Ureteric stenosis was detected in 10 and urinary leak in 7 patients. This indicated nephrostomy in 13 patients (7 for ureteric stenosis, 3 for urine leak and 3 for both leak and stenosis). Perinephric collections were detected in 32 patients, 7 of whom were urinoma related to urine leak. While perinephric fluid drainage was indicated in 10 KTRs, 2 other patients underwent surgical exploration, with hematoma evacuation and ureteric implantation in one and pyelovesicostomy of left transplanted kidney in the other. Large renal pelvis stone (1.26 x 1.1 x 1.3 cm) was detected in one KTRs.

4 Hospitalization and mortality:

Upon presentation, 35/58 (60.3%) indicated hospitalization for a median of 10 days (IQR 5-30 days).



Over the 1st post-transplant year, 45/58 (79.3%) of the patients had at least one hospital admission with median total length of hospital stay (LoS) of 20 days (IQR 2-30).



The 1st year mortality rate was 5.17% (3/58), 2 died with a functioning graft, and the death-censored graft loss was 3/58 (5.17%), all had graft nephrectomy. The cause of graft nephrectomy was vascular complications due to invasive fungal infection in 2 and graft infarction in the 3rd.