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Urinary tract Infection is risk factors off graft outcomes in kidney transplanted patient in Mongolia

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Objectives : The incidence is related to various factors including age, gender difference, immunosuppression type and amount and kidney function. This study was conducted because the prognosis of kidney transplant recipients after treatment for UTI has not been studied in Mongolia.

Methods : From 2018 to 2022, a total of 145 patients who received kidney transplants at the first central hospital of Mongolia participated in this study. This cross-sectional study evaluated incidence and pattern of urinary tract infection among kidney transplant recipients. We divided study participants into 2 groups regarding whether diagnosed with urinary tract infection. Participants demographic data, comorbidity and bacterial isolation data were collected. All analyses were performed using SPSS 25.

Results : Of the 145 patients, 97 (66.8%) patients suffered from urinary tract infections. Study participants' mean age was 37 ± 11 years and 78.6% was woman. There was no statistical difference among study 2 groups by age and body mass index. 94 (96.9%) patients were woman in case group, on the contrary, 3 (3.1%) patients were male ($P < 0.001$). 114 (78.6%) patients underwent living donation kidney transplantation. Main cause of kidney transplantation was glomerulopathy consisting of 88.3% of total participants. All patients received intravenous basiliximab as their induction agent (Table 1). Total 47 patients' urinary pathogen on urine culture were recorded. Most common isolates was gram negative Enterobacteriaceae. E. coli was the leading pathogen and was found in 15 cultures followed by E. faecium ($n = 9$) and K.Pneumoniae ($n = 8$) (Table 2). According to types of urinary tract infection, 18 (35.3%) patients were treated as uncomplicated UTI and 16 (31.4%) patients diagnosed with asymptomatic bacteriuria

Conclusions : The incidence of urinary tract infections is high in renal transplant recipients, especially male recipients in Mongolia. Therefore, prevention and effective management of UTI are crucial in practice of renal transplantation.

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Table 1. Urinary tract infections in renal transplant recipients at First Central Hospital of Mongolia

Variables	Urinary tract infection				Total	P value
	Absence		Presence			
	Count	Percent	Count	Percent		
Sex						
Female	20	41.7%	94	96.9%	114 (78.6%)	<0.001*
Male	28	58.3%	3	3.1%	31 (21.4%)	
Transplant type						
Living donor	35	72.9%	79	81.4%	114 (78.6%)	0.239*
Deceased donor	13	27.1%	18	18.6%	31 (21.4%)	
Diagnosis						
Glomerulopathy	38	79.2%	90	92.8%	128 (88.3%)	0.004 [§]
Diabetes mellitus	8	16.7%	3	3.1%	11 (7.6%)	
Polycystic Kidney Disease	0	0.0%	1	1.0%	1 (0.7%)	
Arterial hypertension	0	0.0%	2	2.1%	2 (1.4%)	
Ureteral Disease and Reflux	2	4.2%	0	0.0%	0 (0.0%)	
Unknown	0	0.0%	1	1.0%	1 (0.7%)	
Induction						
Basiliximub	48	100.0%	97	100.0%	145 (100%)	NA
Age (Mean±sd)	36.6±10.6		39.5±12.7		37.6±11.4	0.142 [†]
BMI (Mean±sd)	23.4±3.8		23.2±4.6		23.4±4.1	0.756 [†]

*-Chi square test, [§]-Fisher exact test, [†]-Independent sample T test

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Table 2. Bacterial isolates of Kidney Transplant recipients.

Bacterial isolates	Frequency	Percent (%)
E.Coli ESBL	6	12.8
E.Coli	9	19.1
Klebsiella pneumoniae ESBL	4	8.5
Klebsiella pneumoniae	8	17
Acinetobacter baumannii	3	6.4
Pseudomonas aeruginosa	4	8.5
Enterococcus faecium	9	19.1
Klebsiella spp ESBL	3	6.4
Enterococcus gallinarum	1	2.1
Total	47	100