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TTS 2024 ISTANBUL TURKEY
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Covid-19 infection outcomes of the kidney transplant recipients in Mongolia

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IINRODUCTION:

Covid-19 Pandemic - Deaths 649.9 per 1 million /World/
542 deaths per 1 million population /Mongolia/ 1 Several studies have shown that the elderly, patients with diabetes, hypertension, cardiovascular disease, chronic kidney disease, organ transplants, and immunosuppressive therapy are more susceptible and have higher rates of complications and deaths from covid-19 infection. 2

Mortality rates ranged from 1% to 5% among kidney transplant recipients with Covid-19 / Madrid, Spain, Thailand/3

2.7% of all 278 kidney transplant recipients died due to covid-19 infection /Mongolia/

METHOD AND MATERIALS:

Study Design: Retrospective Inclusion criteria: 105 (37.7%) of the total 278 kidney transplant recipients over 18 years, who were monitored by outpatients at the FCHM from March 15, 2021 to December 01, 2021, were confirmed positive for covid-19 infection by PCR.

Result of study:

The study included 105 recipients with KT Covid 19 infection. The average age was 48.9 years, 74(69.9%) were male and 31(30.1%) were female. The overall survival of transplantation was 7.8 years. 12.5% of recipients living in rural areas and 87.5% of recipients living in urban areas were diagnosed with severe disease, and there was a statistically significant difference between the groups, and the risk of severe disease was 4 times higher. The incidence of acute kidney injury, repeated KT implantation, and total recipients with a history of infection and recurrent infection were all statistically significant in the severe disease group.

1 year increase in the recipient's age was associated with a 6% increase in the risk of severe illness from Covid-19, and 1-day increase in the risk of severe illness was associated with 37% increase.

The rate of death due to Covid-19 infection was significantly lower in the group with mild-moderate diagnosis of Covid-19 than in the group with severe diagnosis ($p=0.03$). (Figure 1).

Table 1. Laboratory parameters and severity of Covid-19 infection

Laboratory	Covid-19		P утра*	cOR	95% ИИ
	Mild- Moderate	Severe			
	Median (ХИУ-ХБУ)	Median (ХИУ-ХБУ)			
WBC (10 ⁹ /μL)	6 (2-17)	7.5 (0-27)	0.365	1.10	1.01-1.21
Lymph (10 ⁹ /μL)	1.8 (0.5-5.5)	1.1 (0-4.3)	0.001	0.49	0.28-0.87
HGB (г/дл)	13 (9-18.9)	10.8 (6.6-18.3)	0.000	0.67	0.53-0.83
CRP (мг/дл)	4.2 (0.2-104.8)	41.9 (2.5-516.9)	0.000	1.04	1.02-1.07
LDH (U/L)	198.1 (125.4-397.2)	249.8 (144.3-679.5)	0.001	1.01	1.01-1.02
PCT (нгр/мл)	1 (0-8.6)	2.5 (0.1-28.9)	0.000	1.36	0.89-2.08
Creatinin (мг/дл)	1.2 (0.7-5.5)	1.8 (1-10.4)	0.000	2.06	1.39-3.06
BUN	45.6 (20.8-130.8)	77.7 (29.8-342.1)	0.000	1.03	1.02-1.05
Tacrolimus (нгр/мл)	6.3 (1.4-140.6)	7.2 (0.5-20.7)	0.481	0.99	0.96-1.03
eGFR (мл/мин/1,73м ²)	64.5 (13.2-147.2)	41.3 (6-90.4)	0.000	0.95	0.93-0.97
4C score	3 (0-7)	7 (0-20)	0.000	1.88	1.42-2.47

Table 2. Complications, treatment management, and severity of Covid-19 infection

Complications, treatment management	Covid-19				P утра*
	Mild- Moderate		Severe		
	Too (N)	Хувь %	Too (N)	Хувь %	
Pneumonia					
No	49	67.1%	25	78.1%	0.255
Yes	24	32.9%	7	21.9%	
Acute kidney injury					
No	73	100.0%	28	87.5%	0.002
Yes	0	0.0%	4	12.5%	
Re transplantation					
No	73	100.0%	25	78.1%	0.000
Yes	0	0.0%	7	9.4%	
Rejection					
No	73	100.0%	29	90.6%	0.008
Yes	0	0.0%	3	9.4%	
Virus treatment					
Remdesivir	33	45.8%	31	96.9%	0.000
Other	39	54.2%	1	3.1%	
Antibiotic					
No	4	5.5%	0	0.0%	0.000
Yes	69	94.5%	32	100.0%	
Immunosuppression treatment					
MMF stop	1	1.4%	5	15.6%	0.000
MMF reduced	6	8.2%	12	37.5%	
Tacrolimus reduced	22	30.2%	10	31.3%	
Tacrolimus still	44	60.4%	5	15.6%	
Corticosteroids					
No	32	43.8%	0	0.0%	0.000
Yes	41	56.2%	32	100.0%	

Figure 1. Mortality curve due to Covid-19 infection

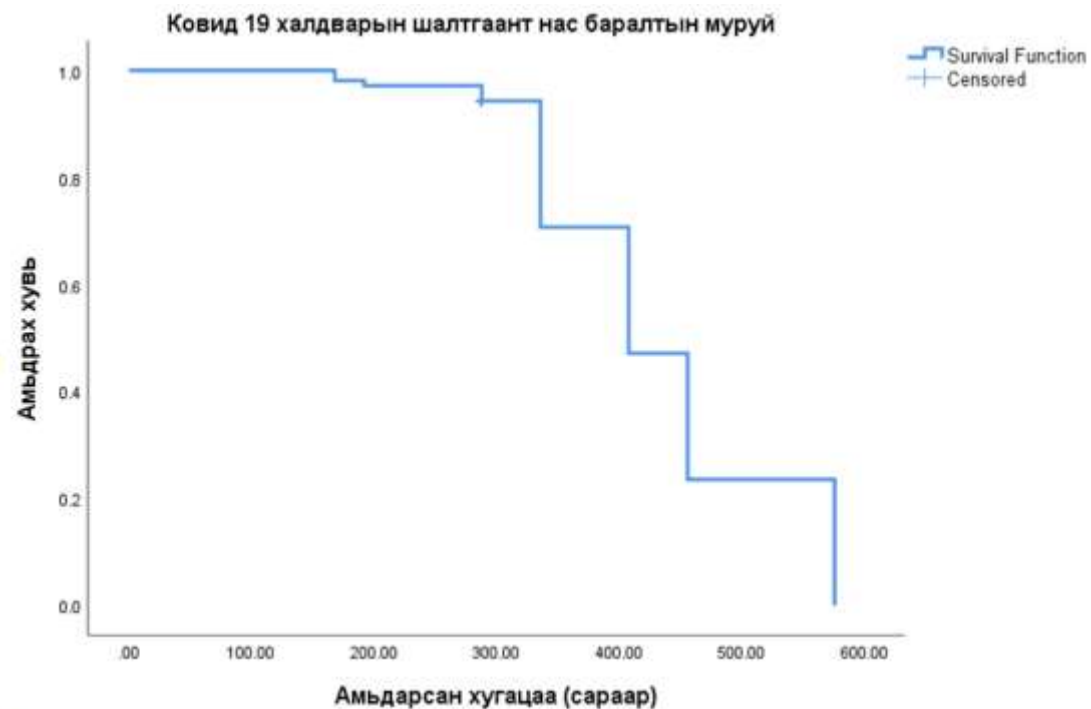
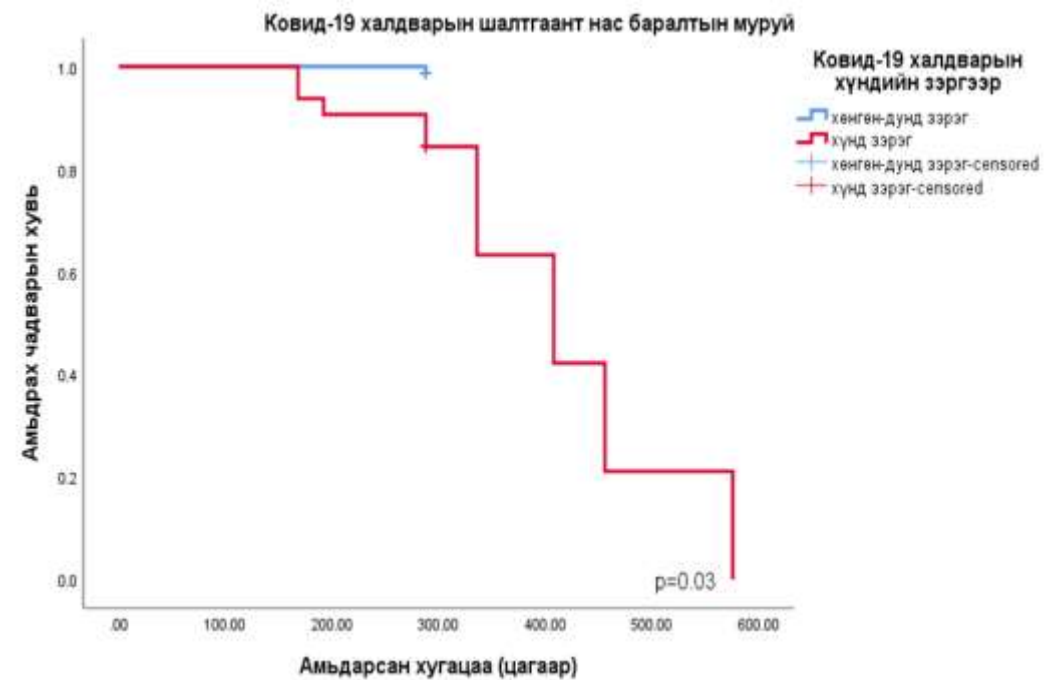


Figure 2. Curve of mortality due to Covid-19 infection, mild-moderate and severe Covid-19 infection





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CONCLUSION:

Risk factors for severe covid-19 infection include if the kidney transplant recipients older, region of residence, longevity of the transplanted kidney, recurrent infection, and regimen of immunosuppressive therapy during infection. It has also been shown to affect treatment outcomes.

Clinical severity in kidney transplant recipients with Covid-19, increases the risk of patient death.