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Infection surveillance status of peritoneal dialysis care providers

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Objectives : Peritoneal dialysis is a last resort for patients with end-stage renal disease who cannot undergo hemodialysis. Renal replacement peritoneal dialysis was introduced in Mongolia in 2014. An important part of peritoneal dialysis treatment is the surgery to place a catheter in the abdomen. This study was motivated by the lack of data on the impact of peritoneal dialysis on infection.

Methods : In this study, 49 cases of a total of 102 doctors undergoing peritoneal dialysis treatment were included in Mongolia in 2014-2021. This study evaluated surveillance for peritoneal dialysis-related infections among peritoneal dialysis patients using a retrospective cohort study design. Participants' demographic information, comorbidities, and bacterial isolates were collected. All analyzes were performed using SPSS 25.

Results : Currently, there are 38 /%/ CAPD, 7 /%/ APD, 3 /%/ APD + HD, and 1 /%/ CAPD + HD of peritoneal dialysis treatment in Mongolia. Out of 49 therapists, 26 /25%/ are being monitored in the city and 76 /75%/ in the local area. The average age of the participants is 31 ± 11 , 59.1% are women and 40.8% are men. 46.9% of all participants were infected with peritonitis and 28.5% were infected with catheter exit infection.

Conclusions : Inadequate hand washing, loss of order of treatment, and pets affect the surveillance of infection due to peritoneal dialysis treatment. Therefore, it is very important to prevent and effectively treat infections due to peritoneal dialysis treatment. Peritoneal dialysis can be performed remotely and the patient can be monitored remotely. Peritoneal dialysis is the last option for patients with end-stage renal disease who are unable to undergo hemodialysis, which affects the lifespan of peritoneal dialysis, dialysis outcomes, and quality of life. In the future, nephrologists making peritoneal dialysis the first choice can preserve renal reserve, prevent complications of secondary hyperparathyroidism, improve patient quality of life, and prolong life.

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	Yes	No
Peritonitis	23	26
Infection of the outlet of the catheter	14	35
Tunnel infection	2	0

PD – Cause of peritonitis

Organism	Peritonitis	
	(n)	(%)
Gram-positive	18	46.1
Coagulase-negative staphylococci	8	44.4
Staphylococcus aureus MRSA	6	33.3
Streptococcus spp	5	27.8
Gram-negative	4	10.2
Escherichia coli	1	25
Klebsiella	2	50
Enterobacter	1	25
No culture sample obtained	2	5.12
Culture-negative	15	38.4
Total	39	100

PD – Infection of the outlet of the catheter

Organism	Exit site infection	
	(n)	(%)
Gram-positive	20	100
Coagulase-negative staphylococci	8	40
Staphylococcus aureus MRSA	12	60
Total	20	1

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№	Variable	Coef.	St.Err.	t-value	p-value	95% Conf	Interval	Sig
1	Hand washing	-0.068	0.035	-1.96	0.055	-0.138	0.001	*
2	Орчин бүрдүүлэлт	0.018	0.014	1.32	0.192	-0.009	0.046	
3	Treatment sequence	-0.007	0.003	-2.27	0.027	-0.013	-0.001	**
4	Catheter bandage	-0.107	0.038	-2.83	0.006	-0.183	-0.031	***
5	Training 1	-0.034	0.039	-0.87	0.386	-0.112	0.044	
6	Training 2	0.018	0.059	0.30	0.767	-0.100	0.136	
7	Age	0.002	0.003	0.68	0.497	-0.004	0.009	
8	Sex	-0.024	0.091	-0.27	0.792	-0.207	0.159	
9	Duration of peritoneal dialysis treatment	0.006	0.003	2.05	0.045	0.000	0.012	**
10	Type of peritoneal dialysis treatment	-0.030	0.039	-0.75	0.454	-0.108	0.049	
11	Pleural inflammation frequency	0.105	0.047	2.25	0.029	0.011	0.200	**
12	Infection	-0.134	0.082	-1.64	0.106	-0.298	0.030	
13	Tunnel infection	0.205	0.095	2.15	0.036	0.014	0.396	**
14	Living environment	-0.071	0.095	-0.74	0.460	-0.262	0.120	
15	Constipation	0.037	0.092	0.41	0.687	-0.148	0.223	
16	Education	0.046	0.084	0.55	0.584	-0.123	0.216	
17	Smoking	-0.064	0.124	-0.51	0.611	-0.313	0.185	
18	Domestic animals	0.419	0.197	2.12	0.038	0.024	0.815	**
	Constant	17.112	4.662	3.67	0.001	7.773	26.451	***