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Comparative Analysis of Medical Costs by Dialysis Modality (Hemodialysis vs. Peritoneal Dialysis)

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Objectives : In Korea, the number of patients with chronic kidney disease (CKD) requiring dialysis is increasing rapidly, placing a significant financial burden on the healthcare system. Hemodialysis (HD) accounts for about 90% of dialysis modality while the use of peritoneal dialysis (PD) is steadily decreasing. This study aimed to examine serial changes in the choice of dialysis modality and subsequent healthcare costs in Korean patients.

Methods : Our study included adult patients diagnosed with CKD who received medical services related to the codes V001 (HD) and V003 (PD) using National Health Insurance claims data from 2018 to 2022. Serial changes in the number of patients with HD and PD were investigated. Propensity score matching was performed to adjust for differences in age, gender, health insurance status, and comorbidities, and then the average annual medical expenses per patient according to dialysis methods were compared. Patients who received both HD and PD during study period were excluded from the cost analysis.

Results : From 2018 to 2022, HD patients increased by 23% (67,562 to 83,071), while PD patients decreased by 8.5% (5,573 to 5,097). Consequently, the HD proportion rose from 92.4% to 94.2%, while PD declined from 7.6% to 5.8%. In 2022, the annual medical expenses for HD patients were 30.5 million KRW, which was significantly higher than the 22.66 million KRW for PD patients, with a difference of 7.84 million KRW. HD patients were older than PD patients, and had a higher proportion of men, medical aid recipients, and diabetics. Even after matching for patient characteristics, HD costs remained higher (30.60 vs. 22.66 million KRW). This difference remained consistent regardless of age or diabetic status.

Conclusions : Dialysis population and related costs are growing rapidly with a pronounced reliance on HD. HD has a higher cost per patient than PD.

Table.jpg



Table:

Changes in the number of patients and medical expenses according to dialysis method

	2018	2019	2020	2021	2022
Number of patients (n)					
Hemodialysis	67,562	73,564	78,081	82,401	83,071
Peritoneal dialysis	5,573	5,434	5,305	5,316	5,097
Number of patients (%)					
Hemodialysis	92.4	93.1	93.6	93.9	94.2
Peritoneal dialysis	7.6	6.9	6.4	6.1	5.8
Annual medical cost: before PSM (1,000 KRW/person)					
Hemodialysis	28,660	28,954	29,475	29,779	30,501
Peritoneal dialysis	20,929	21,118	21,460	21,798	22,659
Annual medical cost: after PSM (1,000 KRW/person)					
Hemodialysis	28,130	28,499	29,098	29,501	30,604
Peritoneal dialysis	20,929	21,118	21,460	21,798	22,659

KRW, Korean Won; PSM, propensity score matching