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Current status, outcomes, and budget impact of dialysis therapy in Korea

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Objectives : We aimed to investigate incidence, prevalence, and medical cost of dialysis therapy in Korea. In addition, we determined the rates of various outcomes, including mortality and major adverse events, and quality of life. We also compared them between patients on peritoneal dialysis (PD) and hemodialysis (HD), and estimated the healthcare budget impact when changing dialysis modality from HD to PD in survival rate-equivalent patient groups.

Methods : We used the National Health Insurance claims database to evaluate the current status and outcomes of dialysis therapy. In addition, we performed a sample survey to investigate the quality of life in dialysis patients, and conducted the budget impact analysis with those data.

Results : Prevalence of HD sharply increased by 3.4-fold in 2015 compared to 2003 [413 to 1,397 per million persons (PMP)], whereas that of PD reported a 1.5-fold rise (149 to 219 PMP). In addition, compared with a 1.9-fold increase in HD incidence (173 to 322 PMP), PD incidence was not changed (57 to 65 PMP) in the same periods. Total medical expenditure of HD was KRW 2.47 trillion in 2015, while that of PD was KRW 160 billion. For the research on outcomes, a total of 96,626 eligible patients with chronic dialysis therapy were included, and they were divided into PD (n=18,216) and HD (n=78,410) groups. The crude morality rates were 95.0 per 1000 patient-years (PY) in PD and 96.5/1000 PY in HD. Compared with HD, PD was associated with increased risks of mortality (adjusted hazard ratio: 1.27, 95% CI: 1.24-1.31, P < 0.0001) and rate of cardiovascular disease (CVD, HR: 1.11, 95% CI: 1.06-1.16, P < 0.0001). Subgroup analysis were performed according to year [the first half (2004-2009), the second half (2010-2015)], and we found that there was no difference in the mortality risk between PD and HD in the second half after matching (HR: 1.01, 95% CI: 0.94-1.09, P = 0.7896). In addition, the difference of the mortality between PD and HD was not significant in non-diabetic patients less than age of 65 in both before and after matching. In a sample

survey conducted in 301 dialysis patients, quality of life measured by EQ-5D was significantly higher in PD than HD (0.86 vs. 0.80, P = 0.016). When estimating the budget impact of the modality changing, which alters the distribution of non-diabetic HD patients aged less than 65 from HD to PD by various scenarios, the reduced expenses would be about KRW 52 to 433.4 billion, being approximately 0.9% to 7.3% of the total expenses to be paid for the next 5 years. In all scenarios, the financial saving effect was induced according to an increase in the number of PD.

Conclusions : The HD use substantially increased compared to PD. Overall survival in HD was superior to PD, whereas there was no difference between PD and HD in recent years. Quality of life in PD was better and the medical cost of PD was cheaper than HD.

Keywords : Hemodialysis, Peritoneal dialysis, Outcomes