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Body mass index in patients undergoing peritoneal dialysis for decades and their effect on patient survival: analysis of data from an end-stage renal disease registry (1985_2014) in Korea

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Background: Significant increases in the prevalence of obesity have been observed among patients with incident end-stage renal disease (ESRD). However, the changes in body mass index (BMI) status in prevalent Korean patients undergoing peritoneal dialysis (PD) over the recent decades and its their impact on patient survival remain unknown.

Methods: Among 80,674 patients from the ESRD registry of the Korean Society of Nephrology since 1985, 6075 patients who were undergoing PD without missing value for body weight and height data were included in the study. According to BMI, registered year, and serum albumin (SA) concentration in the first-registered year, the patients were classified as follows: underweight (UW<18 kg/m²), normal weight (NL18_22.9 kg/m²), overweight (OW 23_24.9 kg/m²), and obese (OB_25 kg/m²); <2000, 2001_2010, and >2011; low (<2.5 g/dL) and high (>2.5 g/dL), respectively. The patients' BMIs were compared with those of 4986 subjects in the general population who participated in the sixth Korea National Health and Nutrition Examination Survey (KNHANES), 2014.

Results: Prior to 2000, UW patients accounted for 5.5%; and OB patients, for 31.2% of all the PD patients, In 2010, the proportions of UW and OB patients among the PD patients increased to 4% and 37.1%, respectively. The results were similar regardless of diabetic patients. When the patients from 2010s were compared with the general population from the KNHANES 2014, the proportions of UW (4% vs. 4%) and OB patients (37.1% vs. 31.7%) were similar. The mortality risks of the OW and OB groups were respectively 1.149 and 1.188times higher than that of the NL group after adjustments. When the patients in the NL and high SA groups were considered as reference groups, the mortality risks of the patients in the UW+ low SA group and UW + high SA groups were respectively 2.73 and 1.72times higher than that of the reference groups, even after adjustment for age, sex, diabetes, hemoglobin level, and blood pressure. We found that the mortality risk of the patients with OB and high albumin levels was 1.165 times higher than that of the reference patients. When the analysis was restricted to patients who were undergoing PD for 1 year, the mortality risks were similar to those of all the patient groups.

Conclusion: In the Korean PD patients, no significant increase in the number of UW patients was observed over the recent decades, but the proportion of OB patients tended to increase, similar to that of the general population. Both the UW and OB patients showed increased mortality risk

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