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## **Comparison of Early Mortality in Incident Elderly Hemodialysis Patients according to the Number of Patients per Dialysis Specialist by Region in Korea**

**Yohan Park**<sup>1</sup>, Se-Hee Yoon<sup>1</sup>, Won-Min Hwang<sup>1</sup>, Sung-Ro Yun<sup>1</sup>, Soon Hyo Kwon<sup>2</sup>, Woo Yeong Park<sup>3</sup>, In O Sun<sup>4</sup>, Kyung Don Yoo<sup>5</sup>, Jang-Hee Cho<sup>6</sup>, Yu Ah Hong<sup>7</sup>

<sup>1</sup>Department of Internal Medicine-Nephrology, Konyang University Hospital, Korea, Republic of

<sup>2</sup>Department of Internal Medicine-Nephrology, Soonchunhyang University Seoul Hospital, Korea, Republic of

<sup>3</sup>Department of Internal Medicine-Nephrology, Keimyung University Dongsan Medical Center, Korea, Republic of

<sup>4</sup>Department of Internal Medicine-Nephrology, Presbyterian Medical Center, Korea, Republic of

<sup>5</sup>Department of Internal Medicine-Nephrology, Ulsan University Hospital, Korea, Republic of

<sup>6</sup>Department of Internal Medicine-Nephrology, Kyungpook National University Hospital, Korea, Republic of

<sup>7</sup>Department of Internal Medicine-Nephrology, The Catholic University of Korea, Daejeon St. Mary's Hospital, Korea, Republic of

**Objectives:** The Korean Society of Nephrology is implementing a dialysis specialist system to improve the quality of care for dialysis patients. Elderly hemodialysis patients may require more specialized medical care because early mortality is more than twice than general hemodialysis patients. Therefore, this study analyzed whether the number of professional dialysis specialists by region in Korea affects the early mortality rate in incident elderly hemodialysis patients.

**Methods:** This study was a multicenter retrospective cohort study. A total of 2694 patients aged 75 years or older who started hemodialysis from January 2010 to August 2018 at sixteen medical institutions belonging to the Korean Society of Geriatric Nephrology. According to the region to which each medical institution belongs, it was classified into Seoul, Gyeonggi, Gangwon, Daejeon-Jeonbuk, Daegu-Kyungpook, and Busan-Ulsan-Kyungnam. The number of patients per dialysis specialist was calculated using the number of patients registered at overall regional hemodialysis center and the number of dialysis specialists. Early mortality was defined as death within 6 months after starting hemodialysis.

**Results:** The early mortality rate by region was the lowest in Seoul (13.4%) and the highest in Gangwon (32.2%). The number of dialysis patients per dialysis specialist by region was the lowest in Seoul (24.0) and the highest in Gangwon (36.1). The number of patients per dialysis specialist was observed as an independent risk factor (HR 1.056,  $P < 0.001$ ) in a Cox regression analysis including confounding factors (planned dialysis, age, BMI, comorbidities, albumin). Similarly, it was also observed as an independent risk factor for overall mortality (HR 1.023,  $P = 0.001$ ).

**Conclusions:** The number of dialysis patients per dialysis specialist was observed to have a significant effect on early mortality in incident elderly hemodialysis patients. In the era of super-aged society Korea should introduce more active dialysis specialist system to improve the prognosis of elderly hemodialysis patients.