Editorial

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The current state of life expectancy of hemodialysis patients in Korea

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According to the 2023 annual report on the Korean Renal Dialysis System (KORDS) from the Korean Society of Nephrology (KSN), the number of end-stage kidney disease (ESKD) patients who started dialysis doubled in the last 10 years; with 15,539 new hemodialysis (HD) patients and at total of 107,015 patients in 2022 [1]. The average age of ESKD patients has consistently increased in the last 10 years. This was 67 years in 2022, and the proportion of elderly ESKD patients comprised 59.8% in 2022 [1]. The total medical expenses for ESKD patients exceeded two trillion Korean won since 2020 [2]. Considering the increasing life expectancy in the Korean general population and the increase in elderly patients with ESKD, it is crucial to assess the status of life expectancy in ESKD patients to manage and prepare for the effects on the national public health program.

Park et al. [3] conducted valuable research to meet these needs. Their longitudinal observational cohort study over six years calculated the remaining life expectancy of ESKD patients, especially those on HD. They also analyzed the life expectancy by subgroups, such as sex, the cause of ESKD (diabetes mellitus, hypertension, and glomerulonephritis), and ages stratified by 2-year increments, which was the strength of this study. The research revealed that life expectancy was lower in patients with diabetes mellitus or males. However, this discrepancy was negligible among the elderly population. The study also compared the life expectancy of HD patients in Korea with that of the general population and HD patients from other countries, using the ratio of expected remaining years of life for comparison. The results showed that HD patients in Korea had a life expectancy of 16% to 63% that of the general population, without significant differences according to sex. Compared to other countries, the life expectancy of Korean HD patients was similar to that of HD patients in Japan, whereas it was longer than that of HD patients in the United States and Europe, possibly due to genetic or ethnic differences. However, it's important to acknowledge the limitations of Park et al.'s study [3]. The study population may have been biased as it did not include younger patients and only focused on outpatients within the overall HD population. Extreme age groups were excluded from the analysis of life expectancy according to the cause of ESKD, which could have impacted the findings. Additionally, the study only considered HD as a dialysis modality, excluding peritoneal dialysis, and

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only included prevalent HD patients. The analysis did not adjust for other variables, such as smoking, alcohol intake, exercise, dialysis vintage, and dialysis prescriptions.

HD patients are known to have higher mortality rates, particularly due to cardiovascular disease (CVD) and infection [1]. CVD affects more than two-thirds of people undergoing HD, leading to complications such as myocardial infarction and stroke, which are related to atherosclerosis. Vascular calcification is a well-known independent risk factor for death and CVD in HD patients [4]. Heart failure and arrhythmias are also common among HD patients, with sudden cardiac death frequently occurring, possibly due to intradialytic hypotension or electrolyte imbalance-related arrhythmia [5]. The high incidence of CVD is attributed to both traditional risk factors like hypertension or diabetes mellitus, and nontraditional risk factors such as electrolyte imbalances, disturbances in mineral metabolism, and cardiac hypertrophy [6]. Regarding infections, vascular access points are particularly vulnerable as they are punctured during each dialysis session, and catheters directly connect the blood and heart to the outside environment [7]. The immunocompromised status of HD patients further accelerates mortality due to increased susceptibility to infections [8]. Other factors, such as malnutrition, sarcopenia, bleeding tendency, and malignancies, contribute to the increased mortality of HD patients [1].

The United States and Europe have already presented data on the remaining life expectancy of dialysis patients, as well as kidney transplant patients, through annual reports data from the United States Renal Data System and the European Renal Association Registry. Utilizing life expectancy data could help clinicians establish longer-term health plans for dialysis patients, especially dialysis prescriptions by nephrologists, and could help to maintain and develop effective treatment strategies. Health policy developers could contribute to policymaking by taking this into consideration. Japan analyzed life expectancy twice, in 2003 and 2015, and compared the results using historic year ratios and year differences (showing an increase in life expectancy of 10% to 20% over more than 3 years; males by 3.41 years and females by 3.78 years) [9]. Japan also conducted a study comparing the death rates of dialysis patients using different databases, the National Database of Insurance Claims and Special Health Checkups of Japan and the Japanese Society for Dialysis Therapy Renal Data Registry, by which quality and accuracy were improved and precision was verified [10].

The KSN presents an annual report on dialysis patients, which includes incidence, prevalence, mortality, and cause-specific death analysis. Adding life expectancy data would enhance the quality of these reports. In this regard, this research holds significance as a first attempt. However, further data and studies are needed to address its limitations.

Conflicts of interest

All authors have no conflicts of interest to declare.

Data sharing statement

The data presented in this study are available upon reasonable request to the corresponding author.

Authors' contributions

Conceptualization: HEY
Writing–original draft, Writing–review & editing: All authors
All authors read and approved the final manuscript.

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