

Association between Initial Vascular Access and Survival in Hemodialysis according to Age

Ha Yeon Kim, Eun Hui Bae, Seong Kwon Ma, Soo Wan Kim

Department of Internal Medicine, Chonnam National University Medical School, Gwangju, Korea

Background/Aims: This study aims to demonstrate whether the association between initial vascular access and mortality among hemodialysis patients varies by age.

Methods: We conducted a retrospective study that included 2,552 patients who started hemodialysis. Of the initial sample, 507 patients who did not survive the first 3 months after initiation of hemodialysis were excluded. Vascular access was divided into three categories: percutaneous catheter, tunneled cuffed catheter, and arteriovenous (AV) access.

Results: Survival rates for patients who received a central venous catheter, such as percutaneous or tunneled cuffed catheter, aged 65-74 years and those ≥ 75 years were reduced, but not for those aged < 65 years (log rank $p < 0.001$, 0.007 , and 0.278). After fully adjusting for potential confounding factors in the patients aged < 65 years, percutaneous and tunneled cuffed catheter were not associated with 5-year mortality. On the other hand, for patients aged 65-74 or ≥ 75 years, percutaneous catheter and tunneled cuffed catheter were associated with higher 5-year mortality rates. As age increased, the conversion rate from central venous catheter, including percutaneous catheter and tunneled cuffed catheter, to AV access decreased (94.1%, 90.5%, and 80.3% for patients aged < 65 years, 65-74 years, and ≥ 75 years, respectively; $p < 0.001$).

Conclusion: In patients aged < 65 years, if conversion from central venous catheter to AV access was performed properly, initial vascular access was not associated with long-term mortality. Therefore, it is prudent to begin hemodialysis with an available central venous catheter rather than delay dialysis in favor of vascular access. We suggest that a "fistula first" strategy is superior for elderly patients and demonstrates that it is desirable to change to AV access, and not maintain an initial central vascular catheter.

Key Words: Vascular access, Age, Hemodialysis