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Impact of Serum β 2-microglobulin Levels on Hospitalization for Cardiovascular Diseases or Infection in Chronic Hemodialysis Patients

Ji Won Min¹, Hyung Wook Kim¹, Kyung Yoon Chang¹, Su-Hyun Kim², Young Ok Kim¹
Dong Chan Jin¹, Ho Chul Song¹, Euy Jin Choi¹, Yong-Lim Kim³
Yon-Su Kim⁴, Shin-Wook Kang⁵, Nam-Ho Kim⁶, Chul Woo Yang¹, Yong Kyun Kim¹

Department of Internal Medicine¹ College of Medicine The Catholic University of Korea

Department of Internal Medicine² College of Medicine Chung-Ang University

Department of Internal Medicine³ School of Medicine Kyungpook National University

Department of Internal Medicine⁴ College of Medicine Seoul National University

Department of Internal Medicine⁵ College of Medicine Yonsei University

Department of Internal Medicine⁶ Chonnam National University Medical School

Background: β 2-microglobulin is a surrogate marker of middle-molecule uremic toxins and serum β 2-microglobulin levels are associated with all-cause mortality in hemodialysis (HD) patients. In this study, we investigated the impact of serum β 2-microglobulin levels on cardiovascular and infectious diseases in chronic HD patients.

Methods: Prevalent HD patients were selected from the Clinical Research Center registry for End Stage Renal Disease, a multicenter prospective cohort study on dialysis patients in Korea. Patients were categorized into three groups by tertiles of serum β 2-microglobulin levels as follows: Tertile 1, β 2-microglobulin <23.47 mg/L; Tertile 2, β 2-microglobulin 23.47-32.24 mg/L; Tertile 3, β 2-microglobulin >32.24 mg/L. Cox regression analysis was used to calculate the adjusted hazard ratio (HR) for first cardiovascular diseases or infection related-hospitalizations.

Results: A total of 1,012 prevalent HD patients were included in this study. The median follow-up period was 24 months. Multivariate Cox proportional hazard model showed that highest tertile had significantly increased risk of cardiovascular diseases related-hospitalizations compared with the lowest tertile (HR: 1.68, 95% CI: 1.05-2.67). The risk of infection related-hospitalizations was significantly increased in higher tertiles compared with lowest tertile (Tertile 2; HR 1.66, 95% CI: 1.07-2.58, Tertile 3; 1.88, 95% CI, 1.23-2.88) after adjustment for clinical variables.

Conclusions: Our data showed that the serum β 2-microglobulin levels were significant predictor of clinical outcome for cardiovascular disease or infection in chronic HD patients.

Key Words: β 2-microglobulin, Hemodialysis, Cardiovascular