

Abstract Submission No.: A-1258**Stress hyperglycemia and subsequent cardiovascular or new-onset diabetes after acute kidney injury requiring continuous renal replacement therapy**

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Objectives : Stress hyperglycemia is very common in critically ill patients and is associated with poor patient outcomes. Because kidneys are involved in glucose and insulin metabolism, the prognostic impact of hyperglycemia can be different in patients with renal impairment. We investigated the impact of stress hyperglycemia during hospitalization in patients with severe acute kidney injury (AKI) requiring continuous renal replacement therapy (CRRT) on patient long-term cardiovascular outcomes or development of now-onset diabetes.

Methods : In this retrospective cohort study using the Health Insurance Review and Assessment database of South Korea, 11,013 adult patients without pre-existing diabetes who received CRRT for ≥ 3 days between 2010 and 2019 and survived until discharge were included. Patients were divided into the two groups: hyperglycemia group and control group. Hyperglycemia was defined as the prescription of oral hypoglycemia agents (OHA) or insulin treatment ≥ 7 days during hospitalization.

Results : Among the patients who survived and discharged, 2,409 (46.6%) patients received OHA/insulin treatment during hospitalization. There was no statistically significant difference in mortality between the two groups (HR = 0.92, 95% CI = 0.86–0.99). While overall incidence of major cardiovascular events was comparable between the groups, the hyperglycemia group had a higher risk of incident acute myocardial infarction (HR = 1.53, 95% CI = 1.11–2.12) and revascularization (HR = 1.41, 95% CI = 1.02–1.94) compared to the control group. Among the patients who were alive for ≥ 1 year (N = 5,944), the hyperglycemia group had a higher risk of incident new-onset diabetes after discharge (HR = 10.10, 95% CI = 6.92–14.73)

Conclusions : In critically ill patients with AKI requiring CRRT who did not have pre-existing diabetes, hyperglycemia during hospitalization is associated with an increased risk of coronary events and new-onset diabetes after discharge, suggesting aggressive screening and treatment in these patients.