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Association of insomnia with the risk of cardiovascular disease and all-cause mortality in patients with incident ESKD

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Objectives: Insomnia is a well identified risk factor for cardio-cerebrovascular disease in the general population. However, the effect of insomnia on cardio-cerebrovascular outcome in end-stage kidney disease patients is not well understood.

Methods: A nationwide health insurance claims data was used to analyze 79,420 patients who initiated maintenance dialysis between January 2009 through December 2017. Insomnia was defined using the claim codes and sleep medication prescription. Patients were categorized into four groups according to the presence of insomnia in the periods before and after dialysis initiation: a) no insomnia; b) insomnia before dialysis only (improved insomnia); c) insomnia after dialysis only (developed insomnia); and d) insomnia at both periods (persistent insomnia). The primary and secondary outcomes were major adverse cardiac and cerebrovascular events (MACCE) and all-cause mortality, respectively. The risks of outcomes were estimated by Cox regression models with inverse probability of treatment weighting.

Results: The mean age was 61.4 ± 13.4 years, and 39.7% of patients were female. Compared to the no insomnia group, insomnia groups were at a significant higher risk for MACCE: the weighted hazard ratios were 1.33 (95% confidence interval [CI], 1.31-1.35) for the developed insomnia group, 1.38 (95% CI, 1.36-1.40) for the improved insomnia group and 1.45 (95% CI, 1.43-1.47) for the persistent insomnia group. Each insomnia groups were also associated with a higher all-cause mortality risk compared to no insomnia group.

Conclusions: In conclusion, the presence of insomnia was associated with an increased risk of cardio-cerebrovascular disease and all-cause mortality in patients who had initiated maintenance dialysis.