Abstract Type : Poster exhibition
Abstract Submission No.: A-0247
Abstract Topic : Dialysis

Weekly Patterns of Emergency Department Visits, Hospitalizations, and Mortality in Patients With End-Stage Kidney Disease: A Korean Nationwide Registry Analysis

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Objectives : Previous studies have shown that patients with end-stage kidney disease (ESKD) undergoing thrice-weekly hemodialysis may experience higher mortality following their longest dialysis-free interval, often referred to as the "post-weekend effect." However, there is limited information on the weekly patterns of emergency department (ED) visits and outcomes in ESKD patients compared with those who have normal kidney function (non-CKD).
Methods : We conducted a retrospective analysis of data from the National Emergency Department Information System (NEDIS) in South Korea from January 2018 to December 2021. ED visits, hospitalizations, and in-hospital mortality were assessed on a day-by-day basis. Logistic regression analyses were used to adjust for demographic and clinical factors, including the Korean Triage and Acuity Scale (KTAS). In total, 159,456 ED visits by ESKD patients and 21,547,014 ED visits by non-CKD patients were included for comparison.
Results : Compared with the non-CKD group, ESKD patients were older, had a higher proportion of males, and presented with more severe conditions at ED admission. A distinct weekly pattern emerged among ESKD patients, with the highest ED visit rates on Monday (19.9%) and Tuesday (15.8%), whereas non-CKD patients most frequently visited on Sunday (19.1%) and Saturday (16.2%). Hospitalization rates were substantially higher among ESKD patients (66.5%) than among non-CKD patients (21.3%), peaking on Wednesday (67.2%) and Thursday (67.4%). Moreover, ESKD patients had a higher in-hospital mortality rate (9.2%) compared with non-CKD patients (5.1%), particularly on Wednesday (9.7%) and Thursday (9.4%).
Conclusions : Our findings indicate that ESKD patients exhibit pronounced weekly patterns in ED visits, hospitalizations, and mortality compared with non-CKD patients. Notably, ED visits among ESKD patients were highest on Monday and Tuesday, whereas hospitalization and mortality peaked on Wednesday and Thursday.