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Comparative mortality outcomes in chronic kidney disease: a cross-national analysis of electronic health records from Korea and Taiwan

Ping-Hsun Wu[1], Soie Kwon[3], Teng-Hui Huang[1], Ming-Yen Lin[1], Yi-Ting Lin[2], Mei-Chuan Kuo[1], Yi-Wen Chiu[1], Shang-Jyh Hwang[1], Jung Pyo Lee[4]
[1]Department of Internal Medicine-Nephrology, Kaohsiung Medical University Hospital, Taiwan
[2]Department of Internal Medicine-Nephrology, Chung-Ang University Hospital, Korea, Republic of
[3]Department of Family Medicine, Kaohsiung Medical University Hospital, Taiwan
[4]Department of Internal Medicine-Nephrology, Seoul National University Boramae Medical Center, Korea, Republic of

Objectives : Patients diagnosed with chronic kidney disease (CKD) demonstrate an elevated risk of mortality. However, this mortality risk may vary between nations and healthcare frameworks, hypothesizing that such differences may stem from ethnic disparities or the caliber of standard care. Specifically, it seeks to assess and compare the mortality rates of CKD patients in Korea and Taiwan utilizing hospital-based electronic health records (EHR).
Methods : Employing a retrospective cohort design, this investigation included 14,600 CKD patients from Korea (Seoul National University Hospital and Seoul National University Boramae Medical Hospital) and 8,165 CKD patients from Taiwan (Kaohsiung Medical University Hospital and Kaohsiung Municipal Siaogang Hospital). The study analyzed the mortality risk differential between the two regions through a multifaceted methodological approach, including a multivariable-adjusted model, a propensity score (PS) matched model, and inverse probability of treatment weighting (IPTW) with 1.25% and 2.5% trimming models. A subgroup analysis was also conducted focusing on patients with advanced CKD (stages 3b-5).
Results : Analysis revealed lower mortality rates in the Korean CKD cohort than the Taiwanese CKD cohort across the multivariate, IPTW with 1.25% trimming, and IPTW with 2.5% trimming models. The PS-matched model indicated no significant divergence in one and three-year mortality, with a persistently lower five-year mortality risk observed in Korean CKD patients. Analogous results were obtained in the advanced CKD sub-analysis.
Conclusions : This retrospective cohort study, leveraging hospital-based EHR databases, found that CKD patients in Korea exhibit a lower mortality risk than those in Taiwan. Further research into disparities in routine clinical CKD care standards between the two locales will be undertaken, potentially contributing to the observed disparities in patient outcomes.