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Stroke risk and post-stroke mortality in patients with renal dialysis: two nationwide studies

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Objectives: Our purpose is to evaluate the risk and outcome of stroke in patients with renal dialysis by using a retrospective cohort study and a nested cohort study.

Methods: We used Taiwan National Health Insurance Database to identify 1378 patients aged ≥ 20 years who had regular renal dialysis in 2000-2004. An age- and sex-matched control cohort (n=11,024) were selected for comparison. Events of incident stroke were considered as outcome during the follow-up period in 2000-2013, and we calculated adjusted hazard ratios (HR) and 95% CIs of stroke associated with renal dialysis. We further used matching procedure with propensity score to estimate the risk of stroke for control group and patients with renal dialysis. A nested cohort study of 318,638 hospitalized stroke patients between 2000 and 2010 also was conducted to analyze the post-stroke mortality in patient with renal dialysis.

Results: Compared with control group, the adjusted HRs of stroke was 2.39 (95% CI, 1.39-2.87) for people with renal dialysis, and were significantly higher in both sexes and every age group. After propensity-score matching, the HRs of stroke for patients with renal dialysis was 2.08 (95% CI 1.32-3.26) during the follow-up period. Among hospitalized stroke patients, adjusted rate ratio (RR) of post-stroke mortality in patients with renal dialysis was 2.62 (95% CI, 2.43-2.82) compared with control.

Conclusions: Patients with renal dialysis faced significantly higher risk of stroke and post-stroke mortality. Risk factor identification and preventive strategies are needed to minimize stroke risk and post-stroke mortality in these vulnerable patient groups.