

中文題目：透析病患曝露斷層檢查顯影劑與重大心血疾病的相關性

英文題目：Cardiovascular Risks in Patients on Dialysis After Exposure to Iodinated Contrast Medium: A Nationwide Population-Based Cohort Study

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Background: Cardiovascular diseases are major causes of morbidity and mortality in dialysis patients. Chronic inflammation is crucial to the atherosclerosis pathogenesis. Iodinated contrast medium (ICM) with direct cytotoxic, proinflammatory, and vasoconstrictive effects is frequently used during procedures performed on dialysis patients. However, no study has investigated the association of ICM exposure with subsequent long-term effects on major adverse cardiac events (MACEs) in the dialysis population.

Methods: A population-based retrospective cohort study was conducted using Taiwan's National Health Insurance Research Database (data from January 1, 2000, to December 31, 2016). Dialysis patients who were exposed to ICM during computed tomography (ICM-CT) and had no prior MACEs were allocated to the ICM-CT group, whereas dialysis patients who were not exposed to ICM were randomly allocated to the non-ICM group after propensity-score matching. The study outcomes were all-cause mortality and hospitalization for a new MACE.

Results: During a median follow-up of 10.3 years, the mortality incidences in the ICM-CT (n=3,751) and non-ICM (n=17,196) groups were, respectively, 96.49 and 12.3 per 1,000 person-years. The incidence of MACEs in the ICM-CT and non-ICM groups were, respectively, 29.65 and 5.46 per 1,000 person-years. Compared with the non-ICM group, the ICM-CT group exhibited significantly higher risks of all-cause mortality (adjusted hazard ratio [aHR], 1.66; 95% confidence interval [CI], 1.35–2.04), MACEs (aHR, 3.90; 95% CI, 2.08–7.33), acute coronary syndrome (adjusted HR: 4.72; 95% CI 0.48–46.2), sudden cardiac arrest (aHR, 6.33; 95% CI, 1.01–39.5), and heart failure (aHR, 3.13; 95% CI, 1.29–7.60). A risk analysis revealed that the ICM-CT group exhibited higher risk of MACEs (aHR, 1.73; CI, 1.45–2.06; $p < 0.001$), acute coronary syndrome (aHR, 3.08; CI, 1.87–5.06), acute myocardial infarction (aHR, 4.02; CI, 2.11–7.69), heart failure (aHR, 1.69; CI, 1.29–2.22), and stroke (aHR, 1.96; CI, 1.55–2.49) relative to the non-ICM group.

Conclusion: ICM is significantly associated with major cardiovascular risks in patients on dialysis. Professionals should consider the detrimental effect of ICM on cardiovascular events in dialysis patients. Future studies should investigate the attenuation of ICM's inflammatory effects.