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Oral Communication Abstract
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Low estimated GFR predicts hemorrhagic transformation in acute ischemic stroke: A meta-analysis

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Objectives: Acute ischemic stroke (AIS) is, on occasion, complicated by hemorrhagic transformation (HT), and the risk of this is higher in patients with renal insufficiency. The association between renal impairment and HT in patients with AIS, however, is not well established. We thus performed a meta-analysis of available observational studies to determine the relationship between renal impairment and HT in patients with AIS.

Methods: This meta-analysis was conducted in accordance with the guidance of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement. PubMed, CKNI, Google scholar, and Web of Science were searched to identify studies published from 1995 to 2018. Relative risk estimates of all the included studies were pooled to calculate pooled OR and 95% confidence intervals.

Results: Meta-analysis of 14 studies showed that patients with poor renal function had a higher risk of developing any intracranial hemorrhage (ICH) (OR: 1.7; 95% CI: 1.13 to 2.57; p= 0.011) and symptomatic intracranial hemorrhage (SICH) (OR: 1.7; 95% CI: 1.32 to 2.17; p= 0.000). In the subgroup analysis, patients with poor renal function (eGFR< 60 and <30mL/min/1.73 m²) had higher risk of developing any ICH. However, this was only significant for those with eGFR< 30. There was an increased risk of any ICH in both non-thrombolysed and thrombolysed patients with poor renal function, although this was not significant in the latter group. Patients with poor renal function (eGFR< 60 and <30 mL/min/1.73 m²) had a significantly higher risk of developing SICH. These patients, who underwent thrombolysis had a significantly higher risk of developing SICH.

Conclusions: Our meta-analysis found that there is an increased risk of any ICH and SICH in AIS patients with impaired renal function. The risk is increased in patients with severe renal dysfunction (eGFR< 30) and those undergoing thrombolysis.