

Intracranial atherosclerotic stenosis

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Intracranial [atherosclerotic stenosis](#) (ICAS) of a major [intracranial artery](#) is one of the most common causes of [stroke](#) worldwide and is associated with a high risk of recurrent [stroke](#) compared with other stroke subtypes.

Diagnosis

see [Multiphase CT angiography](#)

Cerebrovascular atherosclerotic [stenosis](#) (CAS) and [intracranial aneurysm](#) (IA) have a common underlying arterial pathology and common [risk factors](#), but the clinical significance of CAS in IA [rupture](#) (IAR) is unclear. A study of Feng et al. aimed to investigate the effect of CAS on the risk of IAR.

A total of 336 patients with 507 saccular IAs admitted at our center were included. Univariable and multivariable logistic regression analyses were performed to determine the association between IAR and the angiographic variables for CAS. We also explored the differences in CAS in patients aged <65 and ≥65 years.

In all the patient groups, moderate (50%-70%) cerebrovascular stenosis was significantly associated with IAR (odds ratio [OR], 3.4; 95% confidence interval [CI], 1.8-6.5). Single cerebral artery stenosis was also significantly associated with IAR (OR, 2.3; 95% CI, 1.3-3.9), and intracranial stenosis may be a risk factor for IAR (OR, 1.8; 95% CI, 1.0-3.2). In addition, IAs with lobulation may be at a higher risk for rupture than IAs with regular shape (OR, 2.6; 95% CI, 1.1-5.8; $P = 0.026$), although the same was not true of aneurysms with a daughter sac (OR, 1.8; 95% CI, 0.9-3.7; $P = 0.098$). Bifurcation location (OR, 2.4; 95% CI, 1.5-3.8; $P < 0.001$) was significantly associated with aneurysmal rupture. For the patient subgroup aged <65 years, rupture risk was higher for aneurysms with moderate stenosis (OR, 3.4; 95% CI, 1.8-6.5). For patients aged ≥65 years, single-artery stenosis (OR, 1.9; 95% CI, 1.2-3.0)

was statistically associated with IAR.

They observed substantial differences in the severity of atherosclerotic stenosis, parent-artery stenosis, number of stenotic arteries, and intracranial/extracranial stenosis as indicators between ruptured and unruptured aneurysms. CAS is significantly associated with the risk of [intracranial aneurysm rupture](#), whether in patients aged ≥ 65 years or < 65 years. These findings indicate the clinical significance of CAS in IAR ¹⁾.

SICO-ICAS

SICO-ICAS is a [multicenter, prospective, observational cohort study](#). Si et al. aimed to recruit 3,000 patients with symptomatic or asymptomatic Intracranial atherosclerotic stenosis ($> 50\%$ or occlusion) who will be followed up for ≥ 12 months. All participants will undergo pre-designed magnetic resonance imaging packages, blood biomarkers testing, as well a detailed cognitive domains assessment. All participants will undergo clinical visits every 6 months and telephone interviews every 3 months. The primary outcome measurement is ischemic stroke or cognitive impairment within 12 months after enrollment.

This study will establish a large prospective ICAS cohort, hopefully, discover new biomarkers associated with vulnerable intracranial plaques, identify subjects at high risk for incident ischemic stroke or cognitive impairment, and eventually propose a precise diagnostic and treatment strategy for the ICAS population.

Trial registration: Chinese Clinical Trials Register ChiCTR2200061938 ²⁾.

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