Unruptured intracranial aneurysm epidemiology

- Complexity index of microsurgical treatment of unruptured cerebral aneurysms
- Risk factors for preoperative anxiety and depression in patients with unruptured intracranial aneurysms scheduled for endovascular embolization
- Association between intracranial artery stenosis and aneurysm rupture risk: Proximal stenosis as a potential protective factor
- Initial experiences of the Optima coil system in intracranial aneurysm treatment: surgical and interventional approach to safety and efficacy in terms of cerebral arteries
- Predicting neurological complications post clipping surgery in unruptured intracranial aneurysms using the NEURO score: a multi-center retrospective cohort study
- Comparative study of the refined mini-pterional approach with reduced skin incision versus the conventional mini-pterional approach for clipping unruptured middle cerebral artery aneurysms: a propensity score-matched analysis
- Natural history of small incidental intracranial aneurysms: a systematic review and pooled analysis on the influence of follow-up duration and aneurysm location on rupture risk reporting
- Dissecting the Genetic Architecture of Intracranial Aneurysms

Here are some key points about the epidemiology of UIAs:

Prevalence: The exact prevalence of UIAs in the general population is not well-documented, as many individuals with UIAs are asymptomatic and may never be diagnosed. However, estimates suggest that the prevalence is around 3-5% of the population.

Age and Gender: UIAs can occur at any age, but they are more commonly found in adults, particularly in those over the age of 40. Women are more likely to develop UIAs than men, with a female-to-male ratio of approximately 3:2.

Risk Factors: Several risk factors have been associated with the development of UIAs, including:

Family history of aneurysms Smoking Hypertension (high blood pressure) Certain genetic conditions, such as autosomal dominant polycystic kidney disease (ADPKD) Connective tissue disorders, like Ehlers-Danlos syndrome and Marfan syndrome Location: UIAs can occur in various locations within the intracranial blood vessels. The most common sites include the anterior communicating artery, middle cerebral artery, and internal carotid artery.

Size: UIAs can vary in size, and larger aneurysms are generally considered to be at a higher risk of rupture. Small UIAs (less than 5 mm) have a lower risk of rupture, while larger ones (greater than 10 mm) are at a higher risk.

Rupture Risk: One of the primary concerns with UIAs is their potential to rupture, leading to subarachnoid hemorrhage (SAH), which is a life-threatening condition. The risk of rupture depends on various factors, including aneurysm size, location, patient age, and other individual characteristics. Smaller UIAs generally have a lower risk of rupture.

Screening and Detection: UIAs are often discovered incidentally when imaging studies, such as CT scans or MRIs, are performed for other medical reasons. Screening for UIAs in asymptomatic individuals is typically reserved for those with risk factors or a family history of aneurysms.

Around 3% of the adult global population has unruptured intracranial aneurysms (UIAs) [1)]

The detection rate of asymptomatic unruptured Intracranial Aneurysms, particularly in elderly patients, has increased significantly over the past 15 years, coinciding with the increased use of CTA/MRA imaging. Furthermore, the size of the identified UIAs has decreased. These findings raise concerns about the management strategies for UIAs, indicating the need for further research [2)].

The prevalence of Unruptured intracranial aneurysm (UIAs) in first-degree relatives of patients with aSAH in the Hong Kong Chinese population was lower than that in Caucasians. At the same time, most of the UIAs detected in a study were small (85.7% were < 5 mm, vs 66% in a meta-analysis). With a similar incidence of aSAH in Hong Kong (7.5 per 100,000 person-years) as compared with data cited in the literature, the hypothesis that UIA rupture risk size threshold is different in Chinese patients should be further investigated [3)].

1)
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2)
Laukka D, Kivelev J, Rahi M, Vahlberg T, Paturi J, Rinne J, Hirvonen J. Detection Rates and Trends of Asymptomatic Unruptured Intracranial Aneurysms From 2005 to 2019. Neurosurgery. 2023 Sep 11. doi: 10.1227/neu.0000000000002664. Epub ahead of print. PMID: 37695560.
3)
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