



## Get Clarity On Generics

Cost-Effective CT & MRI Contrast Agents



FRESENIUS  
KABI

WATCH VIDEO

# AJNR

## Prevalence of Intracranial Aneurysms with Emphasis on Ethnicity and Race

G. Ben-Arie

*AJNR Am J Neuroradiol* 2023, 44 (5) 580-581

doi: <https://doi.org/10.3174/ajnr.A7869>

<http://www.ajnr.org/content/44/5/580>

This information is current as  
of August 17, 2025.

## Prevalence of Intracranial Aneurysms with Emphasis on Ethnicity and Race

The prevalence of unruptured intracranial aneurysms reaches as high as 3% in the general population.<sup>1-3</sup> As the use of cross-sectional imaging modalities such as CT and MR imaging expands in clinical practice, the detection of intracranial aneurysms has become increasingly more frequent.<sup>3</sup> Moreover, the integration of artificial intelligence tools has improved not only the detection of intracranial aneurysms but also the evaluation of these aneurysms.<sup>4</sup>

Given the risk of rupture and the subsequent devastating consequences on both patient well-being and health care economics, a multitude of studies have attempted to elucidate the natural history of intracranial aneurysms through retrospective analysis and prospective approaches. Those studies aimed to support more informed clinical decision-making. Concurrently, numerous studies have been conducted to identify risk factors that may contribute to the prevalence of intracranial aneurysms and the likelihood of their rupture. Identifying these risk factors could pave the way for targeted screening programs for populations exhibiting these characteristics. Such programs are already debated in the literature.<sup>5-7</sup> The main factors taken into account are a family history of SAH (including the number of affected first-degree relatives), autosomal dominant polycystic disease, age, and various other comorbidities. However, because these risk factors account for only a small percentage of all patients with aneurysmal SAH, there is a need for further research to identify additional high-risk groups. The article by Javed et al,<sup>8</sup> published in the current issue of the *American Journal of Neuroradiology*, represents an effort to identify other specific patient populations at risk for intracranial aneurysm.

The study examined adult patients who underwent screening MRA at a comprehensive stroke center between 2011 and 2020. An analysis of approximately 25,000 patients was conducted following exclusion of patients with known brain aneurysms.

Of 24,397 eligible patients, 2084 screened positive for possible intracranial aneurysms. Bivariate analysis showed significant differences in age, sex, race and ethnicity, chronic constipation, and hyperlipidemia. Logistic regression analysis found that older age, female sex, non-Hispanic Black, and Hispanic ethnicity were significant factors. Targeted screening for high-risk elderly women

of Black or Hispanic descent may yield higher positive findings for brain aneurysms, potentially reducing the risk of rupture. This approach remains uncertain in terms of its cost-effectiveness, suggesting the need for further studies in the future.

A minor criticism of the present work<sup>8</sup> was the data-extraction process: Only positive reports were manually reviewed, while the control group reports were not, owing to the large sample size. A more comprehensive review of these reports could potentially be achieved using natural language-processing tools, and future research may explore the use of such tools to improve the overall robustness of the analysis. Moreover, positive cases were not re-evaluated by a neuroradiologist; instead, only the reports were used, and the data extracted from these positive reports did not encompass aneurysm-specific information, such as size, type, and other relevant characteristics. A subsequent study should delve deeper into these data to assess not only the presence of aneurysms but also the potential risk of rupture.

Despite the aforementioned critiques, some of which the authors acknowledge, the current study<sup>8</sup> is the first to examine the incidence of unruptured intracranial aneurysms among Hispanic and non-Hispanic Black populations. Past research has indicated that Hispanics and non-Hispanic Blacks are more likely to experience SAH from ruptured aneurysms, while White patients exhibit higher rates of unruptured intracranial aneurysms. This outcome is often linked to existing health disparities and barriers to health care access, leading to a larger proportion of these patients presenting with ruptured aneurysmal SAH. The novel findings provided by this study suggest that these patient populations may have a higher incidence of intracranial aneurysms. The use of an exceptionally large cohort further enhances the robustness of the findings.

Finally, the findings presented by Javed et al<sup>8</sup> have the potential to not only impact individual lives but also to shape and inform health policy strategies and contribute to decision-making processes in the broader healthcare landscape.

### REFERENCES

1. Śliwczynski A, Jewczak M, Dorobek M, et al. An analysis of the incidence and cost of intracranial aneurysm and subarachnoid

- haemorrhage treatment between 2013 and 2021. *Int J Environ Res Public Health* 2023;20:3828 CrossRef Medline
2. Vlak MH, Algra A, Brandenburg R, et al. **Prevalence of unruptured intracranial aneurysms, with emphasis on sex, age, comorbidity, country, and time period: a systematic review and meta-analysis.** *Lancet Neurol* 2011;10:626–36 CrossRef Medline
  3. Brown RD, Broderick JP. **Unruptured intracranial aneurysms: Epidemiology, natural history, management options, and familial screening.** *Lancet Neurol* 2014;13:393–404 CrossRef Medline
  4. Alwalid O, Long X, Xie M, et al. **Artificial intelligence applications in intracranial aneurysm: achievements, challenges and opportunities.** *Acad Radiol* 2022;29:S201–14 CrossRef Medline
  5. Kim B. **Unruptured intracranial aneurysm: screening, prevalence and risk factors.** *Neurointervention* 2021;16:201–203 CrossRef
  6. Van Hoe W, van Loon J, Demeestere J, et al. **Screening for intracranial aneurysms in individuals with a positive first-degree family history: a systematic review.** *World Neurosurg* 2021;151:235–48.e5 CrossRef Medline
  7. Rinkel GJ, Ruigrok YM. **Preventive screening for intracranial aneurysms.** *Int J Stroke* 2022;17:30–36 CrossRef Medline
  8. Javed K, Ahmad S, Qin J, et al. **Higher incidence of unruptured intracranial aneurysms: a among Black and Hispanic women on screening MRA in large urban populations.** *AJNR Am J Neuroradiol* 2023;44:574–79 CrossRef

 **G. Ben-Arie**

Diagnostic Imaging Institute  
Soroka University Medical Center  
Beer-Sheva, Israel

<http://dx.doi.org/10.3174/ajnr.A7869>