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Conclusions This study demonstrates significant trends in the endovascular treatment of AVMs, highlighting the changing landscape of care. Decreasing favorability of early intervention in unruptured cases in years since ARUBA may be leading to an increasing proportion of new ruptured AVM cases.

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O-072 EVALUATING THE EVOLUTION OF ENDOVASCULAR THERAPY IN ARTERIOVENOUS MALFORMATION MANAGEMENT: A FIVE-YEAR NATIONAL ANALYSIS OF EFFICACY, COST, AND OUTCOMES

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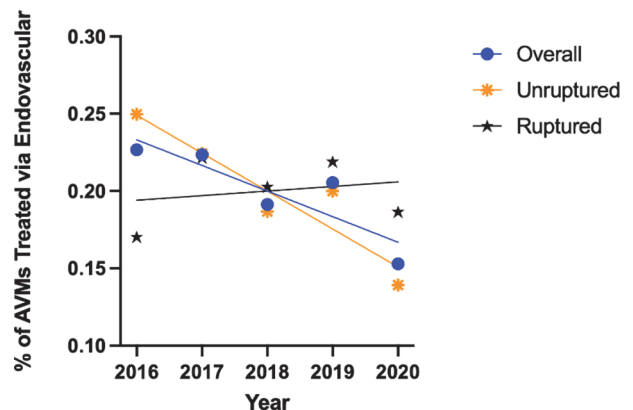
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Introduction Advancements in cerebral arteriovenous malformations (AVMs) treatment, including endovascular therapy, have transformed management options. While surgical resection and radiosurgery are standard, endovascular therapy offers a minimally invasive alternative. The ARUBA trial highlighted outcomes of conservative vs. interventional management for unruptured AVMs. Our study examines the trends in endovascular treatment usage for unruptured and ruptured AVMs.

Methods The National Inpatient Sample provided data on 18–89 year-olds with AVMs from 2016–2020. Endovascular interventions were noted.

Results A total of 6,360 patients from 2016–2020 received endovascular treatment for AVMs nationwide, 1,844 (29.0%) presented with ruptured AVMs. A total of 555 (8.7%) underwent concurrent surgical excision. There was a notable decline in endovascular treatments from 1,445 (22.7%) in 2016 to 975 (15.3%) in 2020 ($p < 0.001$). However, usage

increased among ruptured patients ($p < 0.001$). Mean overall length of stay was 7.4 (CI: 6.83 to 7.94) days. In-hospital complications were reported in 1,325 (20.8%) patients. Of these, 920 (49.7%) of ruptured patients experienced a complication, while only 409 (9.1%) of unruptured patients experienced a complication ($p < 0.0001$). The in-hospital mortality rate was 3.0%, with the majority of mortalities in patients with ruptured AVMs (180, 90.0%). Non-home discharges were observed in 2,055 (32.2%) patients, predominantly to skilled nursing facilities or intermediate care facilities (1315, 20.7%). Subgroup analysis showed that 3,665 (81.0%) unruptured patients had routine discharge, while only 640 (34.6%) of ruptured patients had routine discharge ($p < 0.0001$). The mean treatment cost was \$57,545 (CI: \$54,652 to \$60,438), with the highest costs in the West (\$78,535.99, CI: \$70,638 to \$86,433) and the lowest in the Northeast (\$45,375, CI: \$40,600.85 to \$50,151). Ruptured cases costed 2.35x more than unruptured patients (97,306 vs. 41,332, $p < 0.0001$). Costs increased by 39.4% from \$50,323 in 2016 to \$70,134 in 2020. The cost for treating unruptured AVMs rose by 27.6% ($p = 0.037$), ruptured rose by 17.9% ($p = .291$). Multivariate regression, controlling for demographics and comorbidities, indicated that African American patients had a higher likelihood of presenting with ruptured AVMs (.65, CI: .25 to 1.04), and being female was a predictor of non-home discharge (0.30, CI: 0.03 to 0.58) and tended towards significance for complications (0.43, CI: -0.01 to 0.86).



Abstract O-072 Figure 1

Conclusions This study demonstrates significant trends in the endovascular treatment of AVMs, highlighting the changing landscape of care. Decreasing favorability of early intervention in unruptured cases in years since ARUBA may be leading to an increasing proportion of new ruptured AVM cases.

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