

Myocardial ischemia in anomalous aortic origin of a right coronary artery (R-AAOCA): Medium-term follow-up in a large prospective cohort

Texas Children's Hospital, Department of Pediatric Cardiology and Radiology, Congenital Heart Surgery, Baylor College of Medicine

Tam T. Doan, Carlos Bonilla-Ramirez, Shagun Sachdeva,
J. Kevin Wilkes, Dana L. Reaves-O'Neal, Prakash M. Masand,
Carlos M. Mery, Ziyad Binsalamah, Christopher Caldarone,
E. Dean McKenzie, Silvana Molossi

BACKGROUND

- Anomalous aortic origin of a right coronary artery (R-AAOCA) may lead to myocardial ischemia (ISCH) and sudden death in the young.^{1,2}
- Asymptomatic patients are deemed low-risk if exercise stress test (EST) is normal.

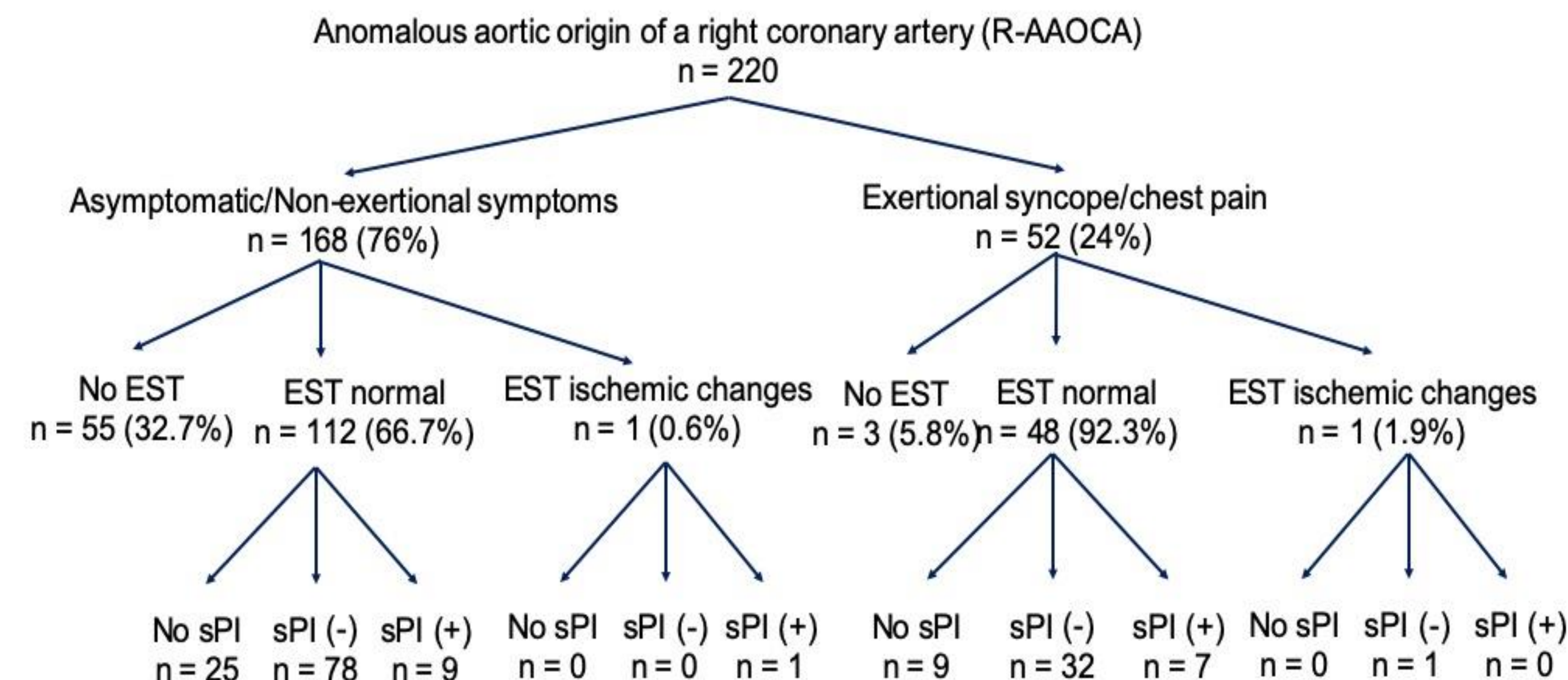
PURPOSE

- We prospectively determined the frequency of reversible ISCH in R-AAOCA following a standardized approach.

METHODS

- All patients ≤20 years old with isolated R-AAOCA were enrolled (12/2012-10/2019)
- CTA and EST (≥8 years old) with stress perfusion imaging (sPI) (≥8 years old) were performed, and both EST and sPI in younger patients if concern for ISCH.
- sPI included nuclear perfusion imaging initially and dobutamine stress perfusion magnetic resonance imaging since 06/2014.³

Fig 1: Flowchart demonstrating clinical characteristics of 220 children with R-AAOCA



RESULTS

- 220 patients (male 135, 61%) with R-AAOCA
- Median age of 11.6 [IQR 6.2-14.7] years, follow up 1.8 [IQR 0.7-4.2] years.
- 168 patients (76%) was asymptomatic or had non-exertional symptoms.
 - EST was performed in 113/168 (67%), only one positive (<1%).
 - Of those with normal EST, 78% had sPI and 9 (10%) had reversible ISCH.
- 52 patients (24%) presented with exertional syncope and/or chest pain.
 - EST was performed in 49/53 (94%), only one positive (2%).
 - Of those with negative EST, 81% had sPI and 7 (18%) had irreversible ISCH..

RESULTS

- No difference in intramural length was seen between patients with normal sPI (n=95) and patients with reversible ISCH (n=18) (5.5±2.3 vs. 6±2.3 mm, p=0.4).
- Surgeries were performed in 45 children who had high-risk features with no mortality.
- All patients were alive and had no activity restriction at last follow-up.

CONCLUSIONS

- Both symptomatic and asymptomatic patients with R-AAOCA can present with reversible ISCH on sPI
- EST is a poor predictor of ISCH, regardless of presenting symptoms.
- Intramural length is not associated with ISCH in R-AAOCA.
- At last follow up, all patients are alive and exercising with no restriction.

REFERENCES

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