Clinical Outcomes of Young Patients Undergoing Endovascular or Open Repair for Abdominal Aortic Aneurysms
A Systematic Review And Meta-Analysis
NO CONFLICT OF INTEREST TO DECLARE

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Abdominal aortic aneurysm (AAA) is typically treated via open repair (OPEN) surgery or via endovascular aortic repair (EVAR).

Younger patients (age: 40-65 years) with AAA undergoing EVAR have a longer follow-up and a higher incidence of reoperation.

As findings on their clinical outcomes are debatable, this study aims to quantify the extent of clinical benefit of OPEN and EVAR in such patients, providing evidence-based insights to improve their outcome.
Methodology

Systematic review and meta-analysis of full papers published from 2000 to 2017 → Twenty-one (N=21) studies included;

Patient population of interest: **250,837 younger subjects (age: 40 – 65 years)** with asymptomatic AAA undergoing either EVAR (N= 149,051) or OPEN (N=101,786);

**Databases:** PubMed, EMBASE, Scopus, Science Direct, Web of Science, The Cochrane Library and CNKI;

**Key search terms:** “Asymptomatic AAA”, “EVAR/OPEN elective surgery”, “younger patients”, “middle-aged patients”, “less/younger than 65 years old”;

**Endpoints:** In-hospital mortality, long-term mortality, post-operative renal failure and reintervention;

**Statistical software** used: “Review Manager (REVMAN) 5.3 Copenhagen” (The Nordic Cochrane Centre, The Cochrane Collaboration, 2014);

Risk ratios were pooled using the **DerSimonian and Laird random-effects model** and **two-sided p-values <0.05** were considered significant.
Results (N=21)

Figure 1. 30-day mortality.

Figure 2. Incidence of reintervention.

Figure 3. Long-term mortality.

Figure 4. Incidence of renal failure.
Discussion and Conclusion

EVAR may lead to improved short- and long-term survival in younger patients (age: 40-65 years) with asymptomatic AAA (Figs. 1 and 3).

Furthermore, there was a significant reduction in incidences of reintervention and renal failure in patients undergoing EVAR as compared to those who underwent OPEN (Figs. 2 and 4).

Future work is underway to quantify the influence of pre-operative, perioperative and post-operative factors on survival.
Thank You