

NETWORK META-ANALYSIS ON PREVENTION OF STROKE FOR PATENT FORAMEN OVALE CLOSURE

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Introduction

- Strokes are associated with high rates of morbidity and are the global second leading cause of death. Up to 40% of ischaemic strokes are cryptogenic.
- A network meta-analysis was conducted to compare the effectiveness of patent foramen ovale closure in patients with cryptogenic stroke or embolism.

Methods and Materials

- A systematic literature search for randomized clinical trials for patent foramen ovale closure was undertaken for the databases Pubmed, Embase, Biosis, Google Scholar and Cochrane.
- Data was collected for the study type, methods, country and key findings.
- Extracted study data included study design, patient characteristics and stroke related outcomes. A bayesian random effects network meta-analysis model was developed in WinBUGS14.

Results

- We identified 1430 references and found 10 studies on four randomized trials in 2963 patients.
- The devices included in our study were Amplatzer (AMP), STARFlex (STF), and HELEX (HLX).
- The odds ratios (ORs) for AMP versus HLX were 0.54 (0.05 -5.38), AMP versus Medical 0.37 (0.07-1.35), AMP versus SLX 0.36 (0.05-1.87), HLX versus Medical 0.68 (0.05-7.78), HLX versus SLX 0.66 (0.07-6.00) and Medical versus SLX 0.99 (0.18-5.53).
- The probability to be best in preventing strokes was 66.7% for AMP, 25.8% for HLX, 4.5% for STF, and 2.9% for medical therapy.

Conclusions

Patent foramen ovale closure with Amplatzer appears superior to medical therapy in preventing strokes in patients with cryptogenic embolism.

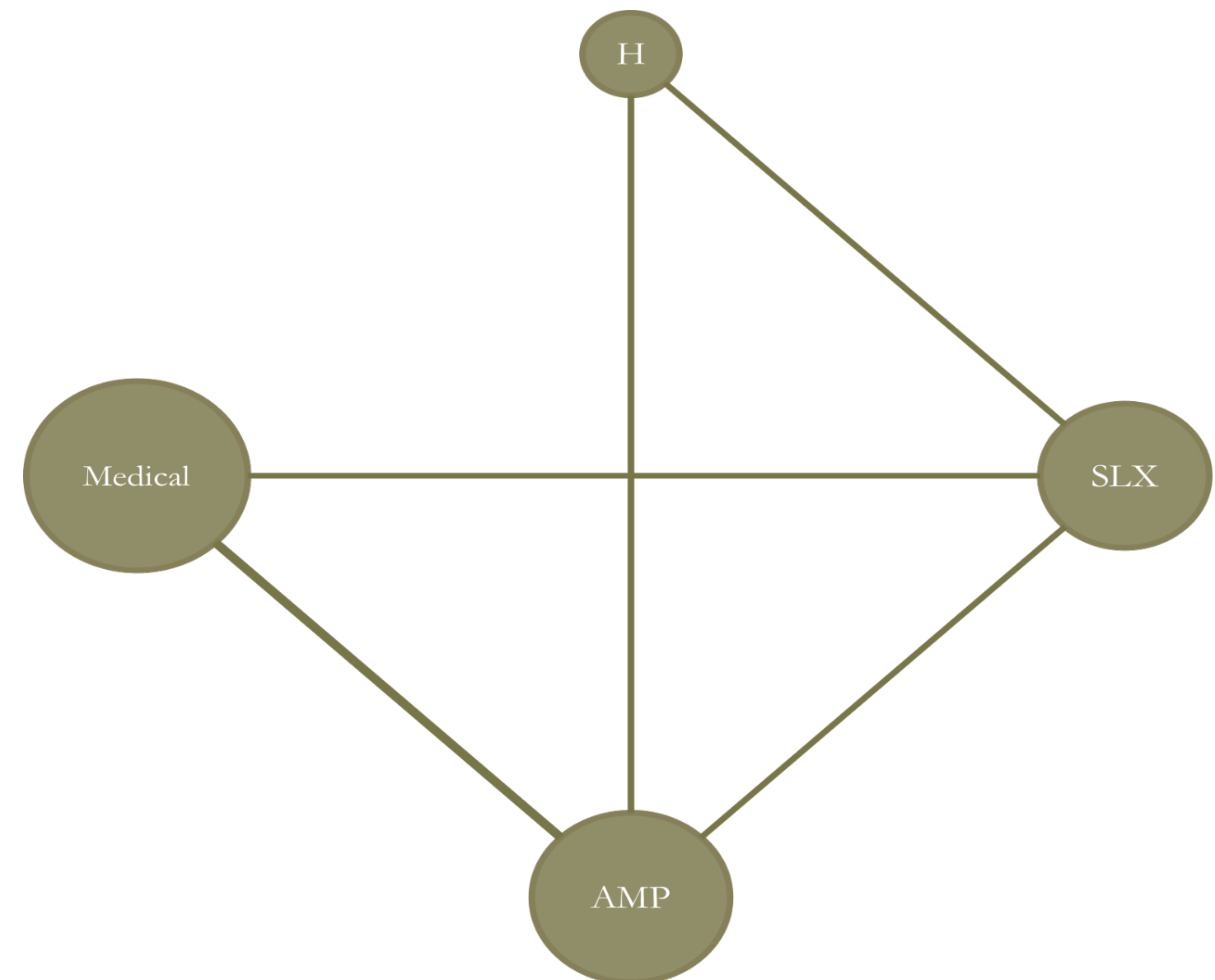


Chart 1. Evidence Network.

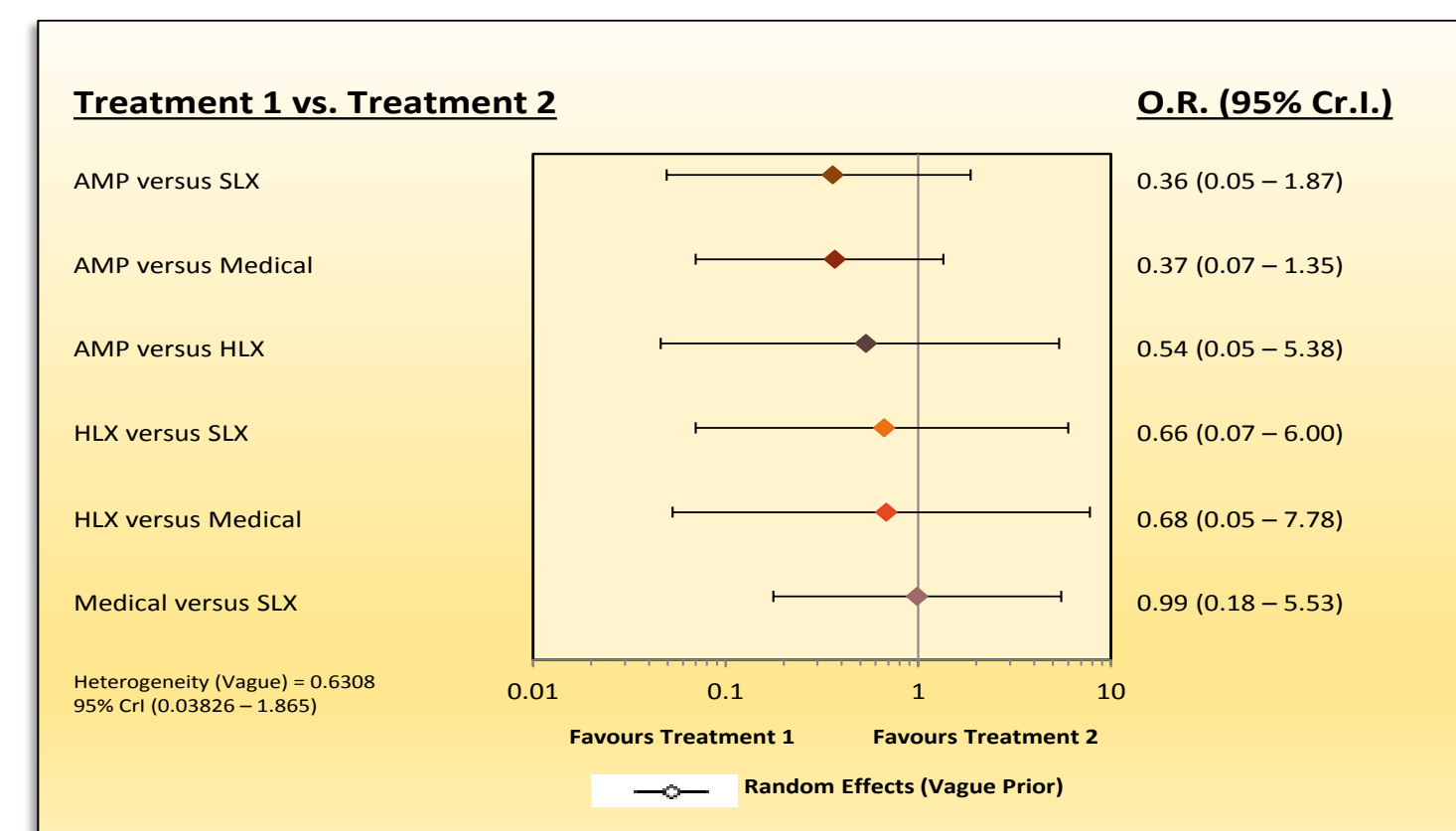


Figure 1. Forest Plot for ORs

AMP			
0.54 (0.05 – 5.38)	HLX		
0.37 (0.07 – 1.35)	0.68 (0.05 – 7.78)	Medical	
0.36 (0.05 – 1.87)	0.66 (0.07 – 6.00)	0.99 (0.18 – 5.53)	SLX

Table 1. Odds Ratio Leagues Diagram

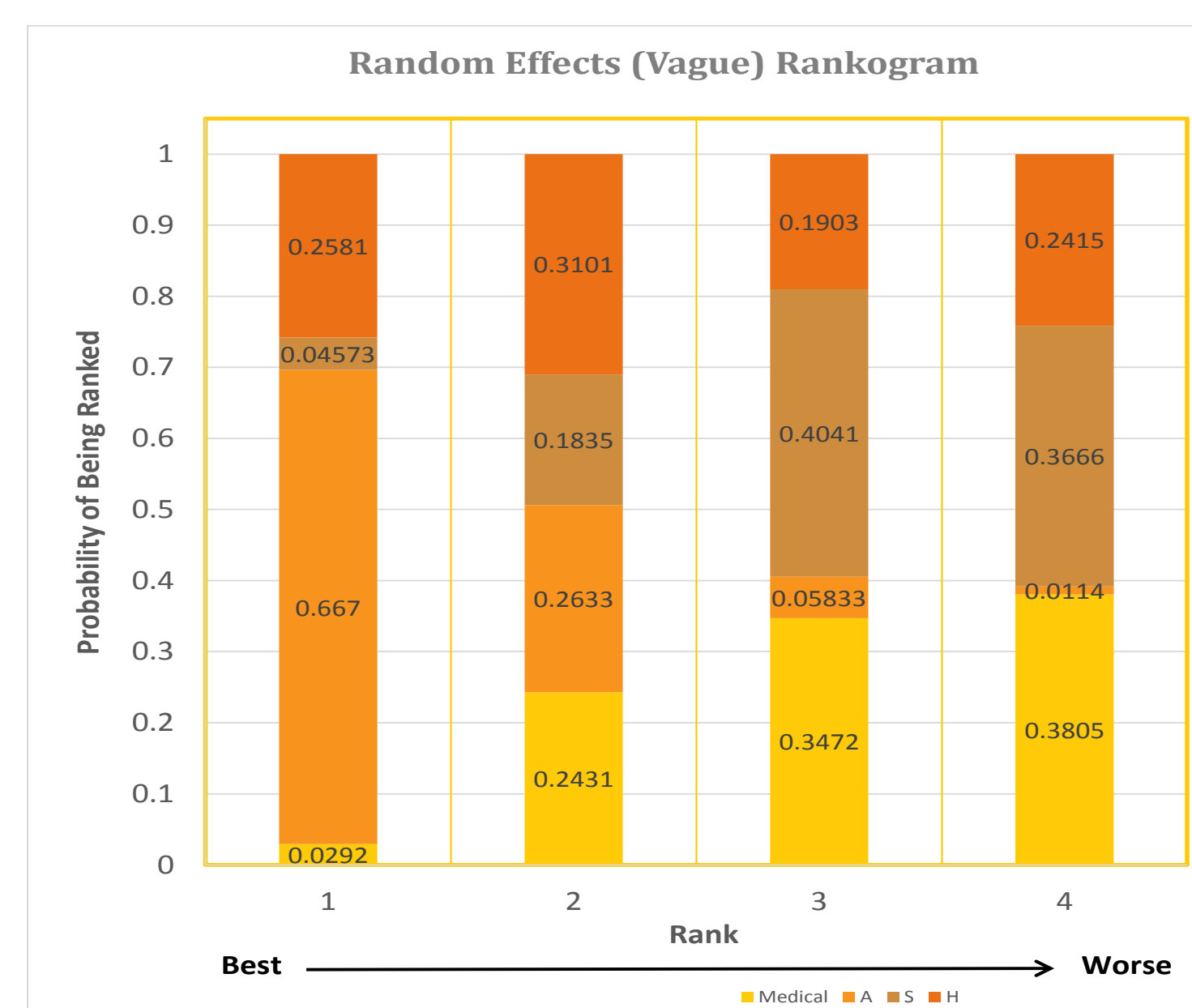


Figure 2. Rankogram

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Awarded Two Platinum and One Bronze Medal by AMCP

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