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, Bias, 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 Amplatz (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 Amplatz appears superior to medical therapy in preventing strokes in patients with cryptogenic stroke.

References


