OPEN VERSUS ENDOVASCULAR REPAIR OF ABDOMINAL AORTIC ANEURYSM IN THE ELECTIVE AND EMERGENT SETTING IN A POOLED POPULATION OF 37,781 PATIENTS: A SYSTEMATIC REVIEW AND META-ANALYSIS

Poster Contributions
Hall C
Monday, March 31, 2014, 9:45 a.m.-10:30 a.m.

Session Title: Outcomes for Intervention in PAD and Aortic Aneurysms: Endovascular Therapy
Abstract Category: 31. Vascular Medicine: Endovascular Therapy
Presentation Number: 1253-89

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Background: Abdominal aortic aneurysm (AAA) affects approximately 5% of males over the age of 65. Open aneurysm repair (OAR) has been performed since the 1950s, however, the performance of endovascular repair (EVAR) of both elective and ruptured AAA has steadily increased. We aimed to evaluate the incidence of mortality and myocardial infarction (MI) in both endovascular and open approach to elective and ruptured AAA repair.

Methods: Systemic review and meta-analysis of observational and randomized clinical trials published prior to Jul 2012 where two reviewers independently conducted the literature search utilizing Medline, Embasse, Cochrane databases. We analyzed the rates of 30-day mortality, 30-day myocardial infarction, and hospital length of stay based on comparative observational and randomized control trials involving endovascular and open approach to elective and ruptured AAA repair.

Results: Overall, 41 trials compared EVAR to OAR with a total population of 37,781 patients. Analysis of 30-day mortality in elective and rAAA repair favored EVAR (OR 0.19, 95% CI 0.17-0.20, I2 = 88.9%, p <0.001). The pooled odds ratio for 30-day mortality for elective AAA was 0.74 (95% CI 0.58-0.96, p=0.02) favoring EVAR and 0.61 (95% CI 0.36-1.02, p=0.06) in patients with ruptured AAA. Twenty-nine trials of elective and 9 rAAA repair trials were included in the analysis of MI. There were a total of 1,835 events (1,806 events in the elective repair group) reported in the EVAR group compared with 2,483 events (2,388 events in the elective repair group) in the OAR group. The pooled odds ratio for elective AAA was 0.74 (95% CI 0.58-0.96, p=0.02) in favor of EVAR. Ruptured AAA was 0.61 (95% CI 0.36-1.02, p=0.06) suggesting a trend in favor of EVAR. The average decrease in length of stay was 296.75 hrs (95% CI 156.68-436.82 hrs, p<0.001) in the EVAR group when compared to open repair.

Conclusions: The available data demonstrate that EVAR has lower rates of 30-day mortality, 30-day myocardial infarction, and hospital length of stay based on comparative observation and randomized control trials involving endovascular and open approach to elective and ruptured AAA repair.