



Comparison of the Effectiveness of Endovascular versus Open Repair of Abdominal Aortic Aneurysms: An Evidence Review?



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Abstract

Introduction:

Abdominal Aortic Aneurysms (AAAs) are defined as enlargements of the abdominal aorta in which the maximum diameter exceeds 3cm or is 50% greater than normal. If the diameter exceeds 5.5cm, AAAs require surgical repair. Endovascular Aneurysm Repair (EVAR) or open repair are the two main methods employed. The aims of this review are to explore the relative merits of both and to determine whether either method offers significant advantages over the other in terms of short-term mortality, long-term mortality and post-operative complications.

Methods:

A NICE Evidence search was conducted and it identified two sets of NICE guidelines, which were then appraised using the AGREE II framework. Secondly, Cochrane and Pubmed databases as well as NICE evidence were searched for systematic reviews. After an abstract and full text screen, five systematic reviews were selected which were then appraised using the CASP systematic review framework. Finally, Pubmed and Embase databases were searched for primary studies: two randomised controlled trials (RCTs) were identified for appraisal using the CASP RCT framework.

Results:

Five of the five systematic reviews found that EVAR had a significantly lower 30-day all-cause mortality than open surgical repair, ranging from a 64-67%. However, none of the five found a statistically significant improvement in long-term mortality. In terms of post-operative complications, the only significant finding was a 494% increase in the risk of aneurysm rupture in EVAR as compared to open repair.

Conclusion:

Our review suggests that EVAR benefits patients in the short-term, although, despite many trials and systematic reviews, it remains unclear whether this benefit in all-cause mortality persists in the longer term.

Author Statements

Conflicts of interest statement

No conflicts of interest have been declared by any authors.

Authorship statement

All authors fulfill ICMJE authorship criteria, which can be accessed at <http://www.icmje.org/recommendations/browse/roles-and-responsibilities/defining-the-role-of-authors-and-contributors.html>. All authors have read and approved the final version, and accept responsibility for information published.

Ethics statement

Authors declare that no ethical approval was required for this article.

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The review process for this manuscript was double blind, where authors and peer reviewers were blinded to each others identity and institution.

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