

A systematic review of open repair versus fenestrated endovascular aneurysm repair of juxtarenal aneurysms

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Introduction: Fenestrated endovascular aneurysm repair (FEVAR) is currently indicated for patients that are unsuitable for open repair (OR) of juxtarenal aneurysms. The long-term outcomes of FEVAR are largely unknown, and there is no level I comparative evidence. This systematic review and meta-analysis of case series aims to compare the outcomes of elective juxtarenal aneurysm surgery by OR and FEVAR.

Methods: A systematic literature search for all published studies on elective repair of juxtarenal aneurysms by FEVAR and OR was conducted. The primary outcomes assessed were perioperative mortality rates, postoperative renal insufficiency, and renal failure over follow up. The secondary outcomes were rates of secondary reintervention and long-term survival.

Results: 35 case series were identified (21 OR and 14 FEVAR studies), with data on 2326 patients. The pooled perioperative mortality rate was equivalent (4.1%), (odds ratio for OR with FEVAR, 1.02; 95% confidence interval (CI), 0.62-1.68; P=0.06). The pooled postoperative renal insufficiency rate was not significantly different (odds ratio for OR with FEVAR, 0.96; 95% CI, 0.53-1.50; P=0.85). However, renal failure over follow up and secondary reintervention rates were significantly higher for FEVAR patients. Pooled Kaplan Meier data showed FEVAR patients as having a lower long term survival compared to OR.

Conclusion: Although FEVAR and OR have similar short term outcomes, in the long term OR produces better outcomes. However, as the evidence from case series is not valid or reliable enough to produce unbiased results, this establishes the need for future randomized controlled trials.

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