

Supplementary data 4. Evidence profile and summary of findings

Table 1. Evidence profile and summary of findings of EVAR versus OSR for AravastuAAA repair in patients younger than 80 years with low surgical risk

Quality assessment							№ of patients		Effect		Quality	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	EVAR	OSR	Relative (95% CI)	Absolute (95% CI)		
Short term mortality (30-day or in-hospital) (excluding participants who died before surgery and those who did not undergo any intervention)												
4	randomised trials	not serious	not serious	not serious	not serious	not serious ^a	20/1362 (1.5%)	58/1361 (4.3%)	OR 0.33 (0.20 to 0.55)	28 fewer per 1000 (from 19 fewer to 34 fewer)	⊕⊕⊕⊕ HIGH	CRITICAL
Long term mortality (beyond 4 years, ITT analysis)												
3	randomised trials	not serious	not serious	not serious	not serious	not serious ^a	464/1243 (37.3%)	470/1241 (37.9%)	OR 0.98 (0.83 to 1.15)	5 fewer per 1000 (from 33 more to 43 fewer)	⊕⊕⊕⊕ HIGH	CRITICAL
Health-related quality of life												
3	randomised trials	not serious	not serious	serious ^b	serious ^c	none	The authors concluded that health-related quality of life was comparable between EVAR and OSR groups.				⊕⊕○○ LOW	IMPORTANT
Long term reintervention (beyond 4 years)												
3	randomised trials	not serious	serious ^d	not serious	not serious	not serious ^a	291/1243 (23.4%)	163/1241 (13.1%)	OR 1.98 (1.12 to 3.51)	99 more per 1000 (from 13 more to 215 more)	⊕⊕⊕○ MODERATE	IMPORTANT
Endoleaks after surgery (Type I)												
3	randomised trials	not serious	not serious	serious ^e	not serious	none	49/852 (5.8%)	not reported	not estimable	not estimable	⊕⊕⊕○ MODERATE	IMPORTANT

Quality assessment							№ of patients		Effect		Quality	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	EVAR	OSR	Relative (95% CI)	Absolute (95% CI)		
Endoleaks after surgery (Type II)												
3	randomised trials	not serious	not serious	serious ^e	not serious	none	118/852 (13.8%)	not reported	not estimable	not estimable	⊕⊕⊕○ MODERATE	IMPORTANT
Endoleaks after surgery (Type III)												
3	randomised trials	not serious	not serious	serious ^e	not serious	none	8/529 (1.5%)	not reported	not estimable	not estimable	⊕⊕⊕○ MODERATE	IMPORTANT

CI: Confidence interval; **OR:** Odds ratio

a. The estimated relative risk for this outcome was provided by the systematic review of Paravastu et al 2014. The systematic review did not explain the reasons for calculating odds ratios rather than risk ratios. However, the method for calculating the relative effect does not affect the certainty of the results.

b. The time frame of data collection differs between studies

c. Only one study presented a full data set, precluding the calculation of a pooled estimate

d. There was moderate-to-high heterogeneity among trials. The likelihood of drawing correct conclusions decreases with increasing heterogeneity (test of heterogeneity I² = 85%).

e. The time of data collection was not specified. It varies among the studies from 30 days to 2 years.

Table 2. Evidence profile and summary of findings of EVAR versus OSR for AAA repair in patients age 80 years and older with low surgical risk

Quality assessment							№ of patients		Effect		Quality	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	EVAR	OSR	Relative (95% CI)	Absolute (95% CI)		
Short term mortality (30-day or in-hospital)												
8	observational	not serious	not serious	not serious	not serious	none	148/7063 (2.1%)	604/6838 (8.8%)	RR 0.25 (0.21 to 0.31)	66 fewer per 1000 (from 61 fewer to 70 fewer)	⊕⊕○○ LOW	CRITICAL
Long term mortality (up to 4 years) open surgery repair versus endovascular repair												
6	observational	not serious	not serious	serious ^a	serious ^b	none	not reported	not reported	RR 1.10 ^a (0.77 to 1.57)	not estimable	⊕○○○ VERY LOW	CRITICAL
Endoleaks after surgery (Type I)												
1	observational	not serious	not serious	not serious	serious ^c	none	1/33 (3.0%)	not reported	not estimable	not estimable	⊕○○○ VERY LOW	IMPORTANT
Endoleaks after surgery (Type II)												
1	observational	not serious	not serious	not serious	serious ^c	none	5/33 (15.0%)	not reported	not estimable	not estimable	⊕○○○ VERY LOW	IMPORTANT

CI: Confidence interval; **RR:** Risk ratio

a. The reported RR compared open surgery repair versus endovascular repair.

b. Wide confidence interval is indicative of a less precise estimate.

c. Only one study with a small sample size.

Table 3. Evidence profile and summary of findings of EVAR versus OSR for AAA repair in patients with high surgical risk as long as they have friendly anatomy, regardless of the age

Quality assessment							№ of patients		Effect		Quality	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	EVAR	OSR	Relative (95% CI)	Absolute (95% CI)		
Short term mortality (30-day or in-hospital)												
1	observational	serious ^a	not serious	serious ^b	not serious	none	210/15807 (1.3%)	199/5308 (3.7%)	OR 0.30 (0.25 to 0.38)	26 fewer per 1000 (from 23 fewer to 28 fewer)	⊕○○○ VERY LOW	CRITICAL

CI: Confidence interval; **OR:** Odds ratio

a. Important differences in patient characteristics between OSR and EVAR for AAA were observed (distribution of total sample, ASA classification).

b. High percentage of previous cardiac surgery both in EVAR (21.8%) and OSR (23.6%). In addition, a small proportion of the population (0.1 %) was low surgical risk.

Table 4. Evidence profile and summary of findings of EVAR versus OSR for AAA repair in patients with hostile anatomy regardless of the surgical risk and age

Quality assessment							№ of patients		Effect		Quality	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Hostile anatomy	Friendly anatomy	Relative (95% CI)	Absolute (95% CI)		
Short term mortality (30-day)												
4	observational	not serious	not serious	not serious	serious ^a	none	11/487 (2.3%)	13/640 (2.0%)	OR 1.02 (0.42 to 2.49)	0 fewer per 1000 (from 12 fewer to 29 more)	⊕○○○ VERY LOW	CRITICAL
Long term reintervention (at 1 year)												
3	observational	not serious	not serious	serious ^b	not serious	none	21/427 (4.9%)	28/553 (5.1%)	OR 0.99 (0.55 to 1.79)	0 fewer per 1000 (from 22 fewer to 37 more)	⊕○○○ VERY LOW	IMPORTANT
Endoleaks after surgery (Type I) (at 1 year)												
2	observational	not serious	not serious	serious ^b	serious ^a	none	20/205 (9.8%)	3/210 (1.4%)	OR 4.56 (1.43 to 14.55)	48 more per 1000 (from 6 more to 160 more)	⊕○○○ VERY LOW	IMPORTANT

CI: Confidence interval; **OR:** Odds ratio

a. Large confidence interval.

b. Data collection not clearly reported.

Table 5. Evidence profile and summary of findings of EVAR versus OSR for patients' preferences

Quality assessment							№ of patients		Effect		Quality	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	EVAR	OSR	Relative (95% CI)	Absolute (95% CI)		
T reatment preferences												
2	observational	not serious	not serious	not serious ^a	serious ^b	none	- Patients who expressed a preference for OSR (13 %, 7/56) were significantly younger (mean age 62.3 years; than those preferring EVAR (mean age 74.0 years). - 46% (77/167) of participants showed a preference for EVAR, followed by 20% (34/167) without any preference, 18% (30/167) OSR, and 14% (23/167) whatever option.		⊕○○○ VERY LOW		CRITICAL	

CI: Confidence interval

a. One study only includes male patients, whereas the other study includes male and few female patients.

b. Small sample size in both studies.

Table 6. Evidence profile and summary of findings of EVAR versus OSR for cost-effectiveness data

Quality assessment							Summary of resources and costs			Quality
Nº. of studies	Study design	Limitations	Inconsistency	Indirectness	Imprecision	Publication bias	Incremental cost	Incremental effect	ICER (£/QALY)	
ICER scenario 1 (£ per QALY)										
1	Systematic review of cost–effectiveness analyses	Not serious	serious ^a	Not serious	Serious ^b		£4014	-0.02	D-	⊕⊕○○ LOW
							£3181	0.0012	£2,845,315	
							£-1852	0.05	D+	
							£2086	-0.01	D-	
ICER scenario 2 (£ per QALY)										
1	Systematic review of cost–effectiveness analyses	Not serious	Serious ^a	Not serious	Serious ^c		£3017	0.04	£73,035	⊕⊕○○ LOW
							£2608	0.04	£61,462	
							£-2362	0.08	D+	
							£1485	-0.01	D-	

ICER: Incremental cost-effectiveness ratio. **D-:** Dominated; more costly and less effective strategy. **D+:** Dominant; less costly and more effective strategy.

a. Differences in populations and settings.

b. EVAR was considered dominant in two studies, dominated in one study and showed a very high ICER in one study.

c. EVAR was considered dominant in one study, dominated in one study and showed a very high ICER in two studies.