

Does Open Repair Still Remain The Gold Standard For Complex AAA Repair: What The Updated And Good Studies That Bear On This Question Show: It's Not The Old RCTs (EVAR 1, DREAM And OVER)?

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I have no conflict of interests



- Complex abdominal aortic aneurysms (AAAs) include juxtarenal AAAs, suprarenal AAAs and type IV thoracoabdominal aneurysms.
- Up to recently open surgical repair was considered the gold standard for the management of surgically fit patients.



- There are no randomized controlled studies comparing these 2 techniques.
- the objective of this presentation is to summarise and present the data from propensity score studies that have directly compared endovascular and open repair of complex AAAs.



Propensity matched comparison of outcomes for endovascular and open surgical repair of complex AAA

Raux M, Patel VI, Cochenec F, Mukhopadhyay S, Desgranges P, Cambria RP, Becquemin JP, LaMuraglia GM. J Vasc Surg 2014



- Between 2001-2012, 59 FEVAR and 324 open surgical repair patients were identified.
- After propensity matching for age, gender, hypertension, congestive heart failure, coronary disease, stroke, COPD, diabetes, preoperative creatinine, the study consisted of 42 FEVARs and 147 OSR.
- An average of 2.9 vessels were treated/patient

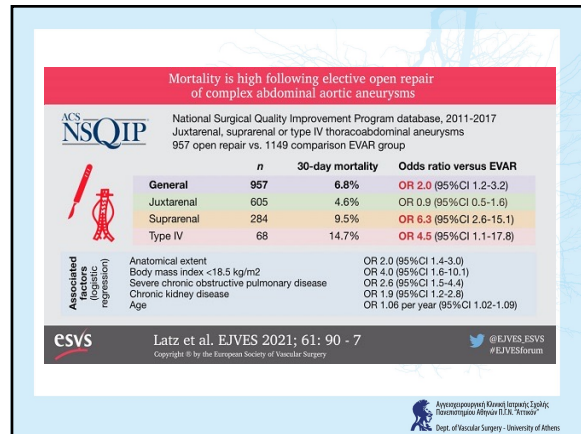


Table III. Univariate analysis of perioperative outcomes

Outcome	FEVAR (n = 42) (%)	OSR (n = 147) (%)	P
30-day mortality	9.5	2	.04
Complication			
Any	43	23	.01
Cardiac	4.8	9.5	.2
Pulmonary	12	10	.2
Renal	7.1	2.7	.1
Procedural	24	8	.004
Graft	33	2	<.0001

FEVAR, Fenestrated endovascular aneurysm repair; OSR, open surgical repair.

Raux M, Patel VI, Cochenec F, Mukhopadhyay S, Desgranges P, Cambria RP, Becquemin JP, LaMuraglia GM. A propensity-matched comparison of outcomes for fenestrated endovascular aneurysm repair and open surgical repair of complex abdominal aortic aneurysms. J Vasc Surg. 2014



A propensity matched comparison of fEVAR and open surgical repair for pararenal and paravisceral AAAs

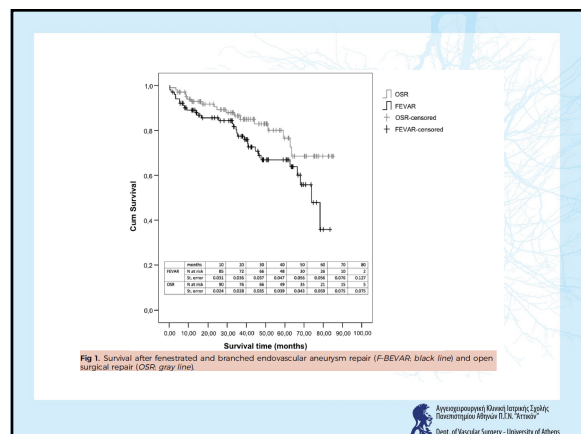
Tinelli G, Crea MA, de Waure C, Di Tanna GL, Becquemin JP, Sobocinski J, Snider F, Haulon S. J Vasc Surg 2018

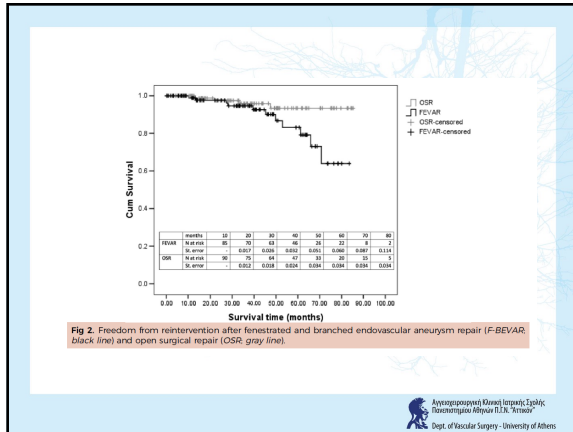
- Patients undergoing f-BEVAR and OSR between 2010-2016 were propensity matched for age, sex, aortic clamp site, CAD, COPD, DM, chronic kidney disease, smoking, aneurysm diameter and previous surgery.
- After 1:1 propensity matching the study cohort consisted of 102 F-BEVARs and 102 OSRs

Table IV. Outcomes comparison of fenestrated and branched endovascular aneurysm repair (F-BEVAR) and open surgical repair (OSR) in the matched groups

	F-BEVAR (n = 102)	OSR (n = 102)	P
30-Day mortality	3 (2.9)	2 (2.0)	.68 [†]
In-hospital mortality	4 (3.9)	3 (2.9)	1 [†]
Any complications	29 (28.4)	31 (30.4)	.63
Definite and transient dialysis	5 (4.9)	4 (3.9)	1 [†]
Definite dialysis	3 (2.9)	2 (2.0)	.68 [†]
AKI	20 (19.6)	53 (52)	<.001
Severe AKI (>50% decrease in CFR)	7 (6.9)	17 (16.7)	.03
Cardiac complications	4 (3.9)	6 (5.9)	.52
Pulmonary complications	6 (5.9)	6 (5.9)	1
Early reinterventions	12 (11.8)	4 (3.9)	.04
ICU days, median (IQR)	1 (1)	1 (1)	.33

AKI Acute kidney injury. CFR glomerular filtration rate. ICU intensive care unit. IQR interquartile range. Values are reported as number (%) unless otherwise indicated. Significant results are listed in bold. [†]Fisher exact test.





Editor's Choice – A Study of the Cost-effectiveness of Fenestrated/branched EVAR Compared with Open Surgery for Patients with Complex Aortic Aneurysms at 2 Years

Morgane Michel, Jean-Pierre Becquemin, Jean Marzelle, Céline Quelen, Isabelle Durand-Zaleski

European Journal of Vascular and Endovascular Surgery
Volume 56, Issue 1, Pages 15-21 (July 2018)
DOI: 10.1016/j.ejvs.2017.12.008

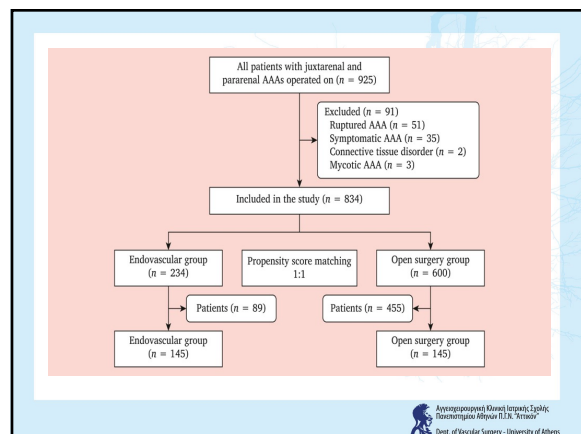
Results were obtained from the national hospital discharge database for both groups.

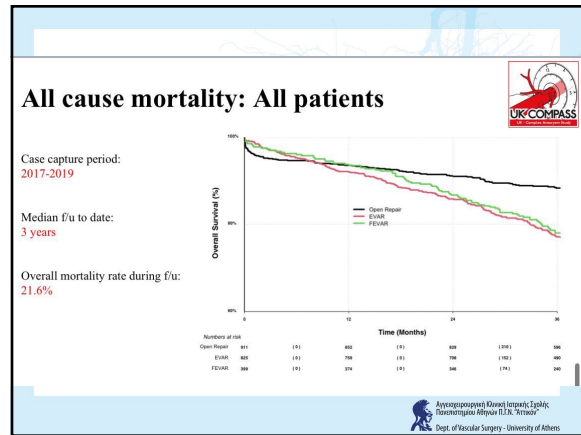
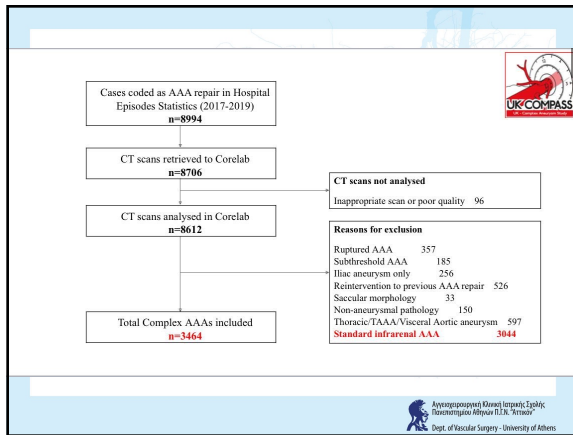
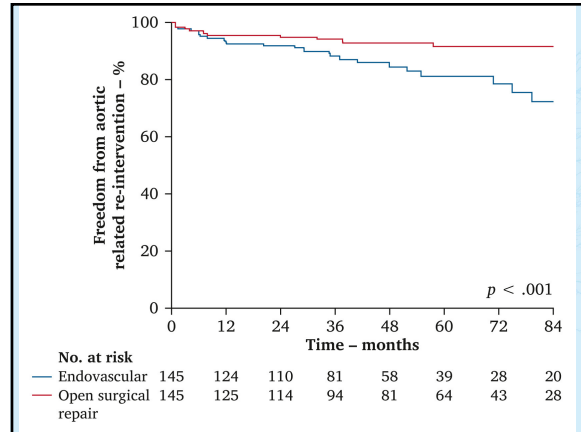
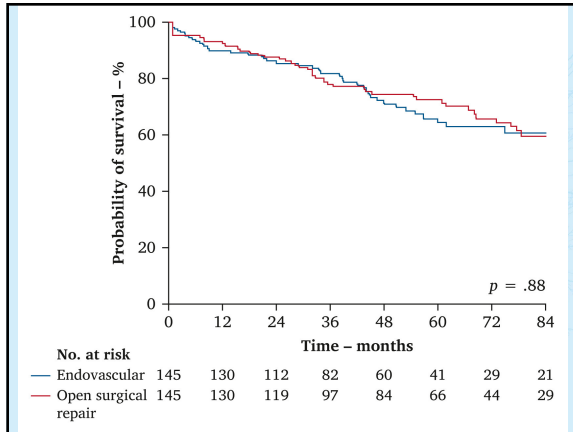
- 268 high risk patients were treated by f/b EVAR and 1678 average or low risk patients were treated with OSR during 2010-2012.
- Mortality did not significantly differ between the groups (14.9% vs. 11.8%, $p = .150$)
- Two year hospital costs were higher in the f/b EVAR group (€46,039 vs. €22,779, $p < .001$).

Short Term and Long Term Clinical Outcomes of Endovascular versus Open Repair for Juxtarenal and Pararenal Abdominal Aortic Aneurysms Using Propensity Score Matching: Results from Juxta- and pararenal aortic Aneurysm Multicentre European Study (JAMES)

Petar Zlatanovic, Daniele Mascia, Stefano Ancetti, Kak Khee Yeung, Maarten Jaap Graumans, Vincent Jongkind, Herman Viitala, Maarit Venermo

Eur J Vasc Endovasc Surg (2023) 65, 828e836





Conclusions

- Preliminary evidence suggests that both techniques are equally effective, f/b EVAR is at least twice as expensive to OSR and has a higher re-intervention rate .
- Comparative studies on long term outcomes and health economics on the optimal treatment of pararenal aneurysms are missing and needed (2024 ESVS AAA guidelines)

Conclusions

- Results from propensity score studies from highly selected centers of excellency, do not accurately reflect the real world experience.
- At present open surgery should still be considered as the gold standard till more evidence emerges.



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