



## Secondary Interventions Up to 30-days following after F/B/EVAR of Complex AAAs: How Morbid are they?

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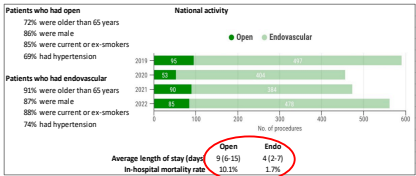


## Disclosures

- UK-COMPASS Trial PI in Cambridge
- Past Clinical Lead NVR
- Departmental funding from Medtronic, WL Gore, Cook and Endologix



## Summary of patients undergoing complex aortic procedures in 2020-2022 in the UK



**Patients who had open**

- 72% were older than 65 years
- 86% were male
- 85% were current or ex-smokers
- 69% had hypertension

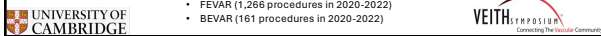
**Patients who had endovascular**

- 52% were older than 65 years
- 87% were male
- 88% were current or ex-smokers
- 74% had hypertension


Metric	Open	Endo
Average length of stay (days)	9 (6-15)	4 (2-7)
In-hospital mortality rate	20.3%	1.7%

The endovascular procedures are split down into:


- FEVAR (1,266 procedures in 2020-2022)
- BEVAR (161 procedures in 2020-2022)



## NVR Complex AAA 2024



- Complex AAAs 2021-2023
- 1,328 Endovascular
- 81% FEVAR 16% BEVAR
- Mortality 1.3%
- Return to theatre 6.1%
- 30-day Re-admission 7.2%




## UK-COMPASS Study

Aorta and Major Branches | Eur J Vasc Endovasc Surg (2024) 67, 540–553

**Editor's Choice – Comparison of Open Surgery and Endovascular Techniques for Juxtarenal and Complex Neck Aortic Aneurysms: The UK COMPLEX Aneurysm Study (UK-COMPASS) – Peri-operative and Midterm Outcomes**


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## Perioperative Outcomes

	Peri-operative Mortality	Peri-operative complications	Secondary intervention
Overall, n = 1 916:	2.9 %	55.4 %	7.7 %
Treat. groups:			
OSR, n = 868:	4.5 %	62.4 %	8.9 %
EVAR, n = 682:	1.2 %	46.2 %	5.7 %
FEVAR, n = 366:	2.2 %	55.7 %	8.7 %



## UK-COMPASS perioperative secondary interventions

Any perioperative secondary intervention, overall and by subgroup for the analysis cohort (n=1916)

Any perioperative secondary intervention	All (n=1916)	By Subgroup (Anatomical Classification and Risk Group) <sup>1</sup>					
		S4mm neck (n=568)		S-9mm neck (n=375)		≥10mm neck (n=971)	
		Standard (n=483)	High (n=125)	Standard (n=281)	High (n=94)	Standard (n=744)	High (n=227)
Overall	148 (7.7%)	41/443 (9.3%)	17/125 (13.6%)	19/281 (6.8%)	7/94 (7.4%)	52/744 (7.0%)	12/227 (5.3%)
Open Repair (n=868)	77 (8.9%)	26/577 (4.5%)	6/55 (10.9%)	10/160 (6.3%)	3/27 (11.1%)	28/521 (5.4%)	4/48 (8.3%)
EVAR (n=682)	39 (5.7%)	2/14 (14.3%)	3/12 (25.0%)	4/69 (5.8%)	3/49 (6.1%)	20/373 (5.4%)	7/164 (4.3%)
FEVAR (n=366)	32 (8.7%)	13/172 (7.6%)	8/58 (13.8%)	5/52 (9.6%)	1/18 (5.6%)	4/50 (8.0%)	1/15 (6.7%)

<sup>1</sup>7 patients could not be assigned a subgroup due to missing data.  
<sup>2</sup>Representative for percentages are subgroup totals.

## Neurological Complications

Specific Perioperative complications, overall and by operation type for the analysis cohort (n=1916)

Perioperative complication	By Operation Type			Overall (n=1916)
	Open Repair (n=868)	EVAR (n=682)	FEVAR (n=366)	
Paraplegia/Paraparesis	28 (3.2%)	32 (4.7%)	14 (3.8%)	54 (2.8%)
Stroke	2 (0.2%)	7 (1.0%)	7 (1.9%)	16 (0.8%)
Transient Ischaemic Attack (TIA)	1 (0.1%)	1 (0.1%)	2 (0.5%)	4 (0.2%)

Breakdown of paraplegia/paraparesis rates, overall and by operation type for the analysis cohort (n=1916)

Paraplegia/Paraparesis	All (n=1916)	By Subgroup (Anatomical Classification and Risk Group) <sup>1</sup>					
		S4mm neck (n=568)		S-9mm neck (n=375)		≥10mm neck (n=971)	
		Standard (n=483)	High (n=125)	Standard (n=281)	High (n=94)	Standard (n=744)	High (n=227)
Overall	56 (2.9%)	14/443 (3.2%)	7/125 (5.6%)	11/281 (3.9%)	2/94 (2.1%)	38/744 (5.1%)	4/227 (1.8%)
Open Repair (n=868)	28 (3.2%)	8/577 (1.4%)	5/55 (9.1%)	5/160 (3.1%)	3/27 (11.1%)	21/521 (4.0%)	3/48 (6.3%)
EVAR (n=682)	32 (4.7%)	0/14 (0.0%)	0/12 (0.0%)	4/69 (5.8%)	0/49 (0.0%)	8/373 (2.1%)	0/164 (0.0%)
FEVAR (n=366)	16 (4.4%)	6/172 (3.5%)	2/52 (3.8%)	1/18 (5.6%)	4/50 (8.0%)	1/15 (6.7%)	

<sup>1</sup>7 patients could not be assigned a subgroup due to missing data.  
<sup>2</sup>Representative for percentages are subgroup totals.

## UK-COMPASS FEVAR Re-interventions

- Bowel resection and stoma 0.9%
- Surgery to groin access site 1.4%
- Open re-intervention 0.3%
- Endovascular Re-intervention
  - Iliac and lower limb arteries 0.8%
  - Visceral arteries and aorta 1.6%
  - Endoleak / graft related 2.7%

## Freedom from secondary interventions 3-years

The Kaplan-Meier plot shows the percentage of patients remaining free from secondary interventions over 36 months. The FEVAR group (red line) shows the highest freedom from secondary interventions, followed by EVAR (blue line) and Open Repair (green line). The bar chart below summarizes the 3-year freedom from secondary intervention rates: Open Repair (9.8%, n=811), EVAR (18.4%, n=626), and FEVAR (22.1%, n=399).

## Conclusions

- Early secondary interventions following BEVAR/FEVAR 6-9%
- Majority are endovascular 5%
- Open surgery to access sites 1.5%
- SCI (4%) and Stroke (2%) rates are not insignificant and remain a concern
- UK-COMPASS 3-year re-intervention rates following FEVAR 22%