Slide 1

Mortality 30-days and 3-5 years after Endo Repair of Juxtarenal and Complex AAA in the UK COMPASS Trial is double that of Open Repairs.

Why is this so ?
and
Why is this different than results from US single centers and the ARC registry ?
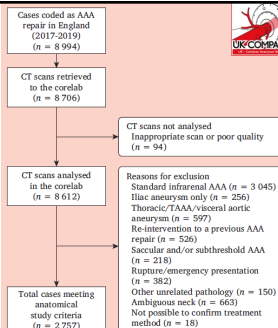
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VASCULAR SOCIETY

Slide 2

No Disclosures

Slide 3 — UK-COMPASS

- Observational study
- Stratified for anatomy and physiological fitness
  - Neck:
    - 0-4 mm
    - 5-9 mm
    - ≥ 10 mm complex
  - Fitness
    - Standard risk
    - High risk
- **Treatments**
  - Open repair
  - FEVAR
  - Off-label EVAR

Flow diagram:
- Cases coded as AAA repair in England (2017-2019) ($n = 8\,994$)
- CT scans retrieved to the corelab ($n = 8\,706$)
  - CT scans not analysed — Inappropriate scan or poor quality ($n = 94$)
- CT scans analysed in the corelab ($n = 8\,612$)
  - Reasons for exclusion: Standard infrarenal AAA ($n = 3\,045$); Iliac aneurysm only ($n = 256$); Thoracic/TAAA/visceral aortic aneurysm ($n = 597$); Re-intervention to a previous AAA repair ($n = 526$); Saccular and/or subthreshold AAA ($n = 218$); Rupture/emergency presentation ($n = 382$); Other unrelated pathology ($n = 150$); Ambiguous neck ($n = 663$); Not possible to confirm treatment method ($n = 18$)
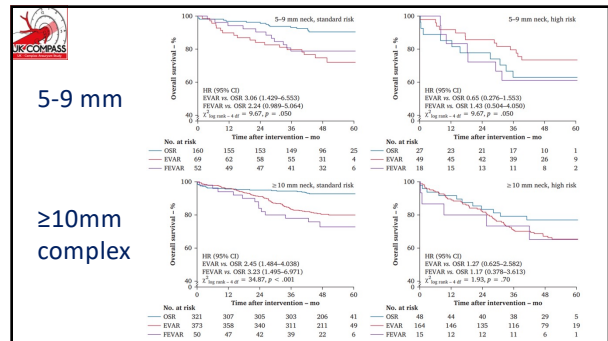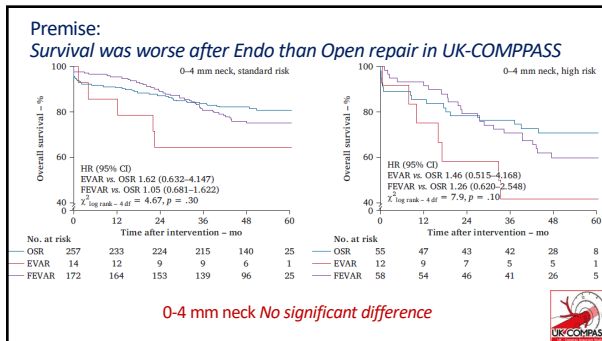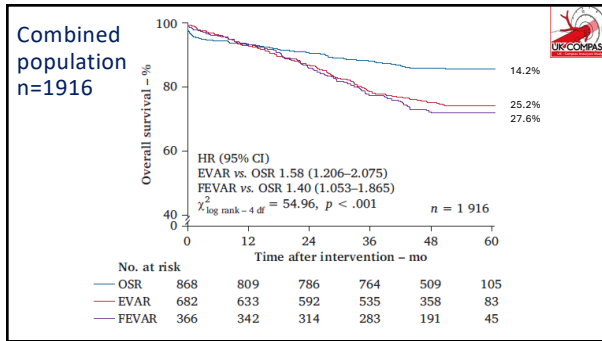- Total cases meeting anatomical study criteria ($n = 2\,757$)

Slide 4 — Perioperative mortality

Group	All ($n = 1\,916$)	Subgroups					
		≤ 4 mm neck ($n = 568$)		5–9 mm neck ($n = 375$)		≥ 10 mm neck ($n = 971$)	
		Standard ($n = 443$)	High ($n = 125$)	Standard ($n = 281$)	High ($n = 94$)	Standard ($n = 744$)	High ($n = 227$)
Overall	55 (2.9)	24/443 (5.4)	8/125 (6.4)	4/281 (1.4)	4/94 (4.3)	10/744 (1.3)	5/227 (2.2)
OSR ($n = 868$)	39 (4.5)	19/257 (7.4)	6/55 (10.9)	3/160 (1.9)	3/27 (11.1)	7/321 (2.2)	1/48 (2.1)
EVAR ($n = 682$)	8 (1.2)	1/14 (7.1)	1/12 (8.3)	1/69 (1.4)	1/49 (2.0)	2/373 (0.5)	2/164 (1.2)
FEVAR ($n = 366$)	8 (2.2)	4/172 (2.3)	1/58 (1.7)	0/52 (0.0)	0/18 (0.0)	1/50 (2.0)	2/15 (13.3)

Open repair: Standard risk, at least 5mm neck 2% mortality
Overall: 4.5%

FEVAR: Standard risk 1.8% mortality
Overall: 2.2%

Slide 5 — Premise:

Survival was worse after Endo than Open repair in UK-COMPPASS

0-4 mm neck *No significant difference*

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5-9 mm

≥10mm complex

Slide 1

Combined population n=1916

Overall survival – %

HR (95% CI)
EVAR *vs.* OSR 1.58 (1.206–2.075)
FEVAR *vs.* OSR 1.40 (1.053–1.865)
$\chi^2_{\log \text{rank} - 4\,df} = 54.96,\ p < .001$ $n = 1\,916$

14.2%
25.2%
27.6%

Time after intervention – mo

No. at risk

	0	12	24	36	48	60
OSR	868	809	786	764	509	105
EVAR	682	633	592	535	358	83
FEVAR	366	342	314	283	191	45

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Can it be device failure?

• No

• Aneurysm Related Mortality (1.3% = FEVAR = OSR)

• Follow-up: 3 - 5 years is too early

• Caution: n=26 Off-label standard EVAR in 0-4 mm neck patients showed poor survival and higher rate of device failure

Slide 3

Why the worse survival?

• UK-COMPASS is an observational study and subject to clinical bias of reserving Open Repair to fitter healthier patients and giving Endo repairs to the less fit.

Survival is a reflection of fitness and health

Our statistical methods did not fully compensate for this bias

• Whole population – every Juxtrarenal and Complex AAA repair in England

• Poorly understood factors
  o Aortic stiffness caused by stent-grafts worsen Heart Failure
  o Inflammatory response of thrombus

Slide 4

Difficulty comparing with US data

• Selected center/s

• Patient selection

• Definitions:
  o Corelab
  o Classification based on treatment (not anatomy)

Slide 5

Conclusion

• Said differences are not seen in all groups of patients

• Overall late survival is primarily a function of preoperative health status

• Differences in study methods make it difficult to compare results from UK-COMPASS and USA