



RISK FACTORS AND ADVERSE EVENTS RELATED TO SUPRA- AND INFRA-RENAL AORTIC DILATION AFTER EVAR

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Conflict of interest: none















Introduction

Aortic remodeling and its effect on neck-related outcomes after endovascular abdominal aortic aneurysm repair (EVAR) is under investigation















To assess the supra- and infra-renal aortic diameter modifications after EVAR and investigate the risk factors and neck adverse events









Methods





- Retrospective analysis of prospective data
- Consecutive patients managed with standard EVAR
- Between 2017 and 2019
- Single tertiary center

Adequate CTA preoperatively, at the 1st and 12th month

Database: Pre- and post-operative infra- and supra-renal aortic diameters, aneurysm diameter, angle, thrombus and calcification







Methods



Infrarenal aorta: just below the lowest renal

artery, at 7mm and 15mm

<u>Suprarenal aorta:</u> just above the highest renal and

superior mesenteric artery (SMA) and just below

the celiac trunk

Neck-related adverse events

- Migration of ≥5mm
- Endoleak type Ia (ET Ia)















150 patients

Results





	Malua
Baseline characteristics	value
Age	72±7.2
Male	150 (100%)
HTN	123 (82%)
DM	19 (12.6%)
DLP	123 (82%)
CAD	51 (34%)
СОРД	54 (36%)
Non smoker	41 (27.3%)
Current smoker	48 (32%)
Previous CVE	7 (4.7%)
PAD	14 (9.3%)
CRD (GFR<30ml/min)	4 (2.6%)





At 12 months

- All infra-renal diameters increased (p<0.001)
- Supra-renal diameter increased (p=.024)
- SMA diameter increased (p=.007)









Risk factors

Neck diameter>29mm (p<.001) Supra-renal fixation (p=.002) Oversizing >20% (p=.017)

Infra-renal dilation

Neck diameter >29mm — Supra-renal dilation











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Neck-related adverse events were related to infrarenal (0mm) diameter increase (p=.017)
 ✓ Dilation at 7 & 15mm was not related (p=.11 & p=.09)

Regarding supra-renal dilation, neck adverse events were related to supra-renal and SMA dilation (p=.007 & p=.05)













Neck-related adverse events at 12 months	N of events	Re-interventions regarding the proximal sealing zone
ET la	7 *1 synchronous migration & ET Ia	 1 open conversion 3 chimney grafts 2 cuffs 1 denied re-intervention
Migration	23	1 cuff 22 under surveillance
Composite of ET Ia & migration	29	6 re-interventions









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 Not clarified yet if neck dilation related to aneurysm disease evolution or technical characteristics of EVAR

Discussion

- Dilation of the aorta also reported after OSR
- Supra-renal dilation not studied as systematically as infra-renal alterations

Kapetanios D, et al. J Cardiovasc Surg (Torino). 2019.

Ribner AS, et al. Int J Angiol. 2018. Illig KA, et al. J Vasc Surg. 1997. Falkensammer J, et al. J Vasc Surg. 2007









Limitations



Retrospective nature



Patient selection bias

✓ Different devices









Conclusions



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- Post-EVAR aortic dilation may be detected from the supra-renal aorta to the total length of the aortic neck
- Multiple factors may affect this phenomenon, as neck diameter >29mm, active supra-renal fixation, and aggressive oversizing
- Neck-related adverse events are more common in patients with infra-and supra-renal aortic dilatation











Thank you for your attention

