Ever smokers, and current smokers had an increased Dmax (0.45 mm/y, \( p = 0.038 \), and 1.00 mm/y < 0.001) and volume growth (5.37 cm³/y, \( p < 0.01 \) and 10.58 cm³/y, \( p < 0.01 \)) compared to non-smokers. There was no difference in growth of Dmax or volume for women compared to men (-0.01 mm/y, \( p = 0.963 \), and -2.93 cm³/y, \( p = 0.134 \)). Statins were associated with a decreased volume growth rate (-4.167 cm³/y, \( p < 0.01 \)).

**Conclusion:** Our results support previous findings that smoking is related to an increased aneurysm growth, and that statins decrease aneurysm growth rates. Interestingly, semi-automatic Dmax and volume growth of AAAs are generally not erratic or discontinuous. The ILT grows faster in a majority of patients with AAAs but in-crease of luminal volume seems to be more closely related to an increased biomechanical stress.

**Disclosure:** TCG is a scientific advisor for VASCOPS GmbH.

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**O-014 Prophylactic Inferior Mesenteric Artery (IMA) Embolization is Unnecessary Before Endovascular Aneurysm Repair (EVAR)**

**Abdominal Aortic Diseases**

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**Introduction:** The impact of the patent inferior mesenteric artery (IMA) at the preoperative imaging before endovascular aneurysm repair (EVAR) on the occurrence of type II endoleak is under intense debate. Few studies have concluded that persistent type II endoleak is associated with adverse outcomes such as aneurysm sac growth and rupture and therefore requires often re-intervention. Prophylactic IMA embolization before EVAR has also been suggested but the benefits of this strategy are controversial. The aim of the current study was to compare two different strategies in the treatment of open IMA prior EVAR: According to strategy A an attempt to embolize the patent IMA was left untouched. In strategy B IMA was routinely performed while in strategy A an attempt to embolize the patent IMA didn’t seem entail any significant clinical benefit and should, therefore, be omitted.

**Methods:** All patients who underwent elective EVAR due to infrarenal AAA during 2005-2015 were reviewed retrospectively in two centres. Information on endoleaks, aneurysm or EVAR related re-procedures and secondary sac ruptures were collected case histories and surveillance images. Primary endpoint was re-intervention rate due to type II endoleak and IMA-related re-intervention rate. Secondary outcome measures were overall re-intervention rate, conversion rate, and aneurysm rupture rate. Statistics Finland provided the dates and causes of deaths.

**Results:** In Strategy A group altogether 346 patients were treated. IMA was patent in 234 (67.6%) patients and successful embolization was performed for 148 (42.7%). The mean follow-up was 68 months. The corresponding figures for Strategy B were, 357 patients with 292 (81.8%) patent IMAs of which only 2 (0.6%) were embolized. The mean follow up for group B was 62 months. At the first imaging performed 1-3 months after EVAR 19.9% of the Strategy A patients and 24.8% of the Strategy B patients had an endoleak (\( p = 0.16 \)). Re-procedure rate due to type II endoleak was 10.3% and 8.3% respectively (\( p = 0.3 \))(1.8/100 person-years (py) and 1.6/100 py respectively). There was no statistical significant difference in the re-procedure rate to occlude a patent IMA (1.7% and 3.0% Strategy A and B respectively, \( p = 0.24 \)(0.55 and 0.29 per 100 person-years respectively). Any EVAR-related re-procedure was done for 21.0% (3.6/100 py) and 20.4% (4.6/100 py) of the Strategy A and B patients respectively (\( p = 0.25 \)). Conversion rate was 0.6% (n=2) and 0.8% (n=3) in the groups A and B respectively. Rupture rate was 2.0% (n=7) in the strategy A and 2.2% (n=8) in the strategy B (\( p = 0.83 \))(0.34/100 py and 0.43/100 py respectively).

**Conclusion:** A patent IMA can be detected in most preoperative CT images prior to EVAR. The strategy to routinely embolize the patent IMA doesn’t seem entail any significant clinical benefit and should, therefore, be omitted.

**Disclosure:** Nothing to disclose

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**O-015 Contemporary Results of Elective Open Repair of Juxta- and Suprarenal Aortic Aneurysms**

**Abdominal Aortic Diseases**

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**Introduction:** Endovascular treatment of juxta- and suprarenal aneurysms has gained popularity recently, but there is no unequivocal evidence to support f/bEVAR or chimney technique. The new European guideline on the treatment of aortic aneurysms contains recommendations based on low level of evidence about the ideal operative solution leaving the decision to the individual surgeon based on local experience. Our aim was to analyse the contemporary results of open surgery in a high volume open surgical center with limited access to f/bEVAR.

**Methods:** Single center retrospective analysis was carried out in a tertiary care university center. Ninety-four consecutive cases were included in the study between 2005 and 2017. All patients who were not a candidate for standard EVAR had elective open repair for juxta- and suprarenal aortic aneurysms. We compared the results of two cohorts: cases requiring suprarenal (SR) or supraceliac (SC) aortic clamping. We used Student’s t-test, chi square test, Fischer’s exact test and Kaplan-Meier survival analysis.
Results: SR clamping was used in 65 cases (69.15%). There was no difference between the groups related to age and gender: the mean age was 65 years (SD) in the SR group including 14 women (21.5%) and 67 years in the SC group, with a female ratio of 13.8% in the SC group. The groups were similar concerning comorbidities and the classification of the American Society of Anesthesiologists. Thirty-day-mortality was not significantly different: 4.6 % in the SR group and 20.7% in the SC group (p=0.129). In the whole cohort 10 patients required postoperative hemodialysis for acute kidney failure (10.64%); 6.2% and 20.7% in the SR and SC groups, respectively (p=0.044). Significant difference was also found related to pulmonary complications in the perioperative period: 7.7% in the SR group and 27.6% in the SC group (p=0.014). No significant difference was found between the groups related to long-term mortality, length of stay in intensive care unit, cardiovascular complications, lower extremity or bowel ischemia and early reoperations.

Conclusion: We experienced a significantly higher need for hemodialysis and pulmonary complications when supraceliac clamping was required during elective open surgery for juxta- or suprarenal aortic aneurysms. Our results support the usage of open surgery for aneurysms in high volume centers when suprarenal aortic clamping is feasible. Cases compelling supraceliac clamping call for consideration of complex endovascular treatment.

Disclosure: Nothing to disclose

O-016 Long-term Survival After Endovascular Repair for Intact Infra-renal Abdominal Aortic Aneurysms is Improving Over Time

Abdominal Aortic Diseases

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Introduction: There is a growing body of literature raising concerns over the long-term durability of endovascular repair (EVAR) for abdominal aortic aneurysms (AAA) and suggesting that long-term outcomes may be better after open AAA repair. However, the data investigating these long-term outcomes largely originate from early in the endovascular era and therefore do not account for increasing clinical experience and technological improvements. Therefore, we investigated whether long-term outcomes after EVAR and open repair have improved over time.

Methods: We identified all EVARs and open repairs for intact infrarenal AAA within an international vascular clinical database (2003-2018). We then stratified patients by procedure year into treatment cohorts of four years: 2003-2006, 2007-2010, 2011-2014, and 2015-2018. We used Kaplan-Meier analysis and Cox proportional hazards models to assess whether there was an improvement in EVAR or open repair over time. Additionally, we matched EVAR and open repairs for each time cohort, to investigate whether the relative survival benefit of EVAR over open repair changed over time.

Results: We included 40,811 EVARs (increasing from 549 performed between 2003-2006 to 24,059 between 2015-2018) and 9,241 open AAA repairs (increasing from 739 performed between 2003-2006 to 4,273 between 2015-2018). For both EVAR and open repair, median age decreased over time (EVAR: 75 vs. 74 vs. 74 vs. 73, P < .001; open repair: 72 vs. 70 vs. 70 vs. 70, P < .001). Four-year survival increased for the periods 2003-2006, 2007-2010, 2011-2014, and 2015-2018 as 76% vs. 80% vs. 84% vs. 88% for EVAR (P < .001) and 81% vs. 85% vs. 86% vs. 88% for open repair (P < .001; Figure 1). After risk-adjustment, compared to 2003-2006, the hazard ratio (HR) for long-term mortality after EVARs performed between 2011-2014 was 0.64 (95%CI: 0.47-0.88; P = .017) and 0.46 for those performed between 2015-2018 (95%CI: 0.34-0.64; P < .001). In contrast, the risk-adjusted mortality did not decrease for

Figure 1. Five-Year Survival per Treatment Cohort for EVAR and Open repair