peri-procedural cerebral embolization is minimized and post-procedural is eliminated with CGuard™ MicroNET-Covered embolic prevention stent system (EPS) in carotid artery stenting (CAS) but long-term safety and efficacy remain undetermined.

Aim: To provide, in a large cohort of consecutive patients, long-term clinical/neurologic and duplex ultrasound (DUS) evaluation of CGuardEPS routine use to perform CAS in all-comer (no exclusion criteria) symptomatic or increased-stroke-risk asymptomatic carotid stenosis subjects with NeuroVascular Team revascularization recommendation.

Methods and results: PARADIGM-Extend is a non-industry-funded, prospective academic study (all-referrals-tracked). In asymptomatic lesions, intervention is mandated in case of increased-stroke-risk features. There is first-line study device use, with EPD choice according to tailored-CAS algorithm. Independent neurologist evaluation and DUS are before CAS, at 48h, 30 days, and then every 12 months. There is external source data verification, external angiographic corelab, and external statistical analysis.

Current enrollment is 251 patients (51–87 years, 57.1% symptomatic; 263 arteries). There has been 100% CGuardEPS use (no other stents). Angiographic diameter stenosis was reduced from 83±9% to only 6.7±5% (p<0.001, "CEA-like" effect of CAS).

Peri-procedural death/major stroke rate was 0%. One event, with no change in NIH-SS/Rankin scale and no clinical sequel, was CEC-adjudicated as minor stroke (0.4%); there was one (type2) MI (0.4%) and one haemorrhagic transformation of prior ischaemic cerebral infarct leading to death (0.4%). There were no post-procedural ischaemic neurologic events.

Total death/major stroke/minor stroke rate at 30 days was 0.8%, and total death/major stroke/minor stroke/MI rate at 30 days was 1.2%.

At 1–12 months there were no strokes or stroke-related deaths (0%). At 12–24 months there was one cerebellar stroke in an AFib patient (MRI) but no carotid-territory stroke or stroke deaths (0%).

By 12 months there was one asymptomatic in-stent restenosis (DEB-PTA Tx) and one clinically silent stent occlusion (in re-initiated neck radiotherapy). External carotid artery patency rate was 98.6% prior to CAS, 97.1% post CAS and at 30 days, and 96.9% at 12 months.

Post-procedural in-stent velocities were normal and remained normal throughout the 24-mo follow-up period (peak-systolic/end-diastolic 0.69±0.29/0.18±0.09m/s at 30 days, 0.82±0.47/0.22±0.13m/s at 12mo, and 0.73±0.31/0.19±0.09m/s at 24mo), indicating normal device healing.

Conclusions: PARADIGM-Extend accumulating 24-month clinical and DUS evidence is consistent with unprecedented, sustained safety and cerebral embolism prevention efficacy of the CGuard™ MicroNET-covered embolic prevention stent system when applied routinely for stroke prevention in symptomatic and increased-stroke-risk asymptomatic subjects with carotid stenosis.

P742
Biomechanical properties of the human internal jugular vein wall are heritable

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Introduction: The elasticity of the internal jugular vein (IJV) is a major determinant of cerebral venous drainage and right atrium venous return. Increased IJV wall stiffness may induce retrograde venous hypertension to the brain leading to several neurological disorders, or may cause the diversion of flow towards the vertebral venous plexus thus avoiding the increase of intracranial pressure. However, the level of genetic determination of IJV biomechanical properties has not been studied yet.

Purpose: The aim of our study was to evaluate the heritability of static and dynamic IJV biomechanics using a classical twin study.

Methods: 170 adult healthy Caucasian twins (43 monozygotic [MZ] and 42 dizygotic [DZ] pairs) were involved from twin registry. Anteroposterior and mediolateral diameters of the IJV were measured bilaterally by ultrasonography. Measurements were made both in the sitting and supine positions, with or without Valsalva maneuver. Structural equation modeling was performed by using the Mplus Version 7.1 maximum likelihood estimation Univariate quantitative genetic modeling was applied to decompose the phenotypic variance of the considered parameters into heritability (A), shared (C), and unshared (E) environmental effects (ACE analysis).

Results: Genetic factors are responsible for 30–70% of the biomechanical properties of IJV at higher venous pressure even after adjustment for age and gender. The highest level of inheritance was found in the supine position regarding compliance (62%) and venous diameter during Valsalva (69%). Environmental factors instead are more important in the sitting position, when the venous pressure is

low and the venous lumen is almost collapsed. The range of capacity changes between the lowest and highest intraluminal venous pressure (full distension range) are mainly determined by genetic factors (58%).

Conclusions: Our study has shown substantial heritability of IJV biomechanics at higher venous pressures even after adjustment for age and gender. These findings yield an important insight to what degree the biomechanical properties of the vascular wall are formed by genetic and by environmental factors in humans. Elucidation of the genes that influence jugular venous biomechanics at different pressures may provide a new insights into the pathophysiology of neurological disorders that are associated with altered venous biomechanics.

P743
YKL-40 levels are associated with long-term cardiovascular mortality in peripheral arterial disease patients

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Background and aims: YKL-40 is an inflammatory marker secreted by macrophages and is expressed in atherosclerotic plaques. YKL-40 increases in coronary artery disease (CAD) with poor coronary collateral vessel development and higher levels are linked to reduced survival in CAD patients. Studies evaluating YKL-40 in patients with peripheral arterial disease (PAD) are scarce. This study aims to elucidate a possible link of YKL-40 and PAD severity as well as cardiovascular long-term mortality.

Methods: YKL-40 was measured at baseline in 365 elderly PAD patients (age 69±10.4, 33.7% women, Fontaine stage I-II) by bead-based multiplex assay. Patients were followed for seven years to assess long-term cardiovascular and all-cause survival by Kaplan-Meier and Cox regression.

Results: YKL-40 levels were associated with declining ankle-brachial index (ABI) in PAD patients without Moenckeberg's mediasclerosis (R=-0.189, p=0.002). PAD patients with mediasclerosis exhibited higher YKL-40 levels (p=0.002). Baseline YKL-40 levels were significantly associated with cardiovascular mortality (HR 1.52 (1.21–1.91), p<0.001) and all-cause mortality (HR 1.45 (1.20–1.75), p<0.001) over a seven-year observation period. After multivariable adjustment for gender, patient age, smoking status, systolic blood pressure, HbA1c, low density lipoprotein cholesterol, estimated glomerular filtration rate, aspartate aminotransferase, and c-reactive protein, YKL-40 was still a significant predictor of cardiovascular (HR 1.34 (1.03–1.74), p=0.031) and all-cause mortality (HR 1.26 (1.02–1.55), p=0.031).

Conclusion: Increased YKL-40 levels predict poor long-term cardiovascular survival in patients with peripheral arterial disease. Furthermore, YKL-40 correlates with patients' ABI in PAD in the absence of mediasclerosis.

P744
Epidemiology of lower extremity artery disease in a rural setting of Sub-Saharan Africa: the TAHES study

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Background: Data on epidemiology of lower extremity artery disease (LEAD) in general population in Sub-Saharan Africa (SSA) are sparse.

Purpose: This study aims to estimate the prevalence of LEAD among participants of TAHES, a cohort about cardiovascular diseases (CVD) in a rural setting in SSA.

Methods: The cohort was launched since 2015 among adults aged over 25 years based on daily follow up for recording events and annual visit for global evaluation. Ankle-brachial index (ABI) was measured for the first time during the third visit in 2017. Data about risk factors were collected using the WHO STEPS adapted questionnaire in a systematic door-to-door survey. The LEAD was defined as ABI <0.90.

Results: We recorded ABI among 1003 out of 1407 TAHES' participants. A predominance of females (61.4%) was observed. The mean age was 44.4+15.6 years and 49.9% were under 40 years. Regarding CVD risk factors, prevalence were estimated for sedentary behavior (68.2%), alcohol consumption (43.5%), low intake of fruit and vegetable (4.0%), tobacco smoking (5.2%), Overweight or obesity (BMI>25) (27.7%), raised blood pressure (36.8%) and raised blood glucose (5.4%). Prevalence of LEAD was estimated at 5.5% (95% CI: 4.2%-7.1%) for all, 7.0% (95% CI: 5.1%-9.4%) for women and 3.1% (95% CI: 1.7%-5.5%) for men. Five individuals (0.5%; 95% CI: 0.2%-1.2%) had incompressible arteries (ABI >1.40), including four men. In multivariate analysis, LEAD was significantly associated with age >55 years (OR: 2.17; p=009) and female gender (OR: 2.00; p=0.04).

Conclusion: Prevalence of LEAD is high in this population and predominates among women and people over 55 years old.