

**Introduction** Neuro-interventional models are often used to develop, test, and compare devices and techniques. Their implications depend greatly on accurate modeling of the vessel diameters, which may be impacted by ethnic variations.

**Aim of Study** To determine if vessel size differences exist between the European and Chinese populations.

**Methods** A systematic review of the literature in the PubMed database was performed to identify studies reporting vessel diameters obtained through validated imaging on healthy European and Chinese populations from Jan 2000 until Jul 2022. All Circle of Willis vessels were studied, at least 5 articles per vessel were needed to perform a meta-analysis using a random-effects model. Analyses were performed using RStudio (2022.07.2+576), and results reported as means (in mm) with 95% CI.

**Results** A total of 595 studies were screened, of which 28 could be analyzed quantitatively. The M1 diameter for the European population (2.37 mm [95% CI: 2.26–2.49]) was not different from the Chinese population (2.60 mm [95% CI: 2.32–2.93]) ( $p=0.149$ ,  $I^2=99.2\%$ ). The BA diameter for the European population (2.92 [2.49–3.43]) was smaller compared to the Chinese population (3.66 [3.27–3.99]) ( $p=0.014$ ,  $I^2=98.2\%$ ). Lastly, the VA diameter for the European population (2.87 mm [2.57–3.20]) was similar to the Chinese population (2.67 mm [2.32–3.07]) ( $p=0.427$ ,  $I^2=98.3\%$ ).

**Conclusion** In this meta-analysis, the MCA M1 and VA diameters were found to be similar for European and Chinese populations, while the BA was smaller in the European population. This suggests most models are already capturing ethnic variations in vessel size.

**Disclosure of Interest** MM, SL, JW, and PB are employees of Cerenovus. KK is an employee of Superior Medical Experts.

#### P179/71 TRANS-VASCULAR HF\_OCT IMAGING: FROM ANIMAL MODELS TO HUMANS

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10.1136/jnis-2023-ESMINT.206

**Introduction** High-frequency optical coherence tomography (HF-OCT), is an intravascular imaging modality with unprecedented resolution for in vivo imaging (~10 $\mu$ m). We describe our preclinical and ex-vivo cadaveric observations of intracranial vasculature and its environment.

**Aim of Study** To investigate the potential of HF-OCT imaging (Gentuity, USA) in the preclinical setting.

**Methods** A canine model was used for imaging through the posterior and anterior circulation to study the vascular, perivascular environment and subarachnoid space (SAS) structures. Implants of the basilar or middle cerebral artery were used to study implant behavior and healing process. A porcine model was used to image the venous sinuses. In addition to classic OCT-pullbacks, dynamic HF-OCT imaging of specific locations through time was performed. Ex-vivo cadaveric imaging was consecutively performed through the arterial and venous segments. Suitable combinations of guiding catheters, microcatheters and microwires were used to achieve access to desired locations. Images were acquired with the use of contrast to clear the blood.

**Results** High-resolution images of the vasculature were obtained from the arterial and venous sites in all cases. The architectonics of the SAS were studied and classified, with extensive similarities between animals and human cadavers. Apposition of intravascular implants and endothelial coverage/intimal hyperplasia not seen with conventional imaging was imaged with HF-OCT. Vessel wall pathology in human cadavers was seen in detail.

**Conclusion** HF-OCT imaging can offer detailed visualization of the vessel wall and perivascular environment, expanding its use from vessel wall pathology and implant behavior to hydrocephalus and aneurysm formation.

**Disclosure of Interest** VA, ME: Nothing to disclose

MG: No relevant disclosures

#### P180/99 MORE THAN JUST NOISE: ASSOCIATION OF PULSATILE TINNITUS WITH ANXIETY, DEPRESSION AND REDUCTION OF QUALITY OF LIFE

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10.1136/jnis-2023-ESMINT.207

**Introduction** Patients with pulsatile tinnitus (PT) can have potentially devastating psychological impact, which effect how best to treat these patients, many options which include endovascular treatment.

**Aim of Study** Objectives of this study include quantifying the prevalence of depression and anxiety in the United States PT population as well as identifying demographic risks associated with effects of PT on depression and anxiety.

**Methods** Subjects were recruited from online PT groups. Questionnaires utilizing the validated Tinnitus Functional Index (TFI) were combined with demographic questions in a secure online survey. In addition, the PHQ-9 and GAD-7 questionnaires were used to obtain the prevalence of concurrent depression and anxiety, respectively. Results were collected over a 5-month period.

**Results** A total of 515 surveys were included (84% female, 65% unemployed, mean(sd) age was 46.4 years (14.2)). Median (IQR) symptom duration was 1.9 (0.56, 4.8) years. Survey data showed 46% and 37% of subjects with moderate to severe depression and anxiety, respectively. Higher TFI scores were associated with moderate to severe depression (OR 1.07; 95%CI 1.06–1.09,  $p<0.001$ ) and anxiety (OR 1.05, 95% CI 1.04–1.06,  $p<0.001$ ), with TFI subscores also independently being associated in a univariate analysis.

**Conclusion** The prevalence of moderate to severe depression and anxiety in the PT population, which was previously unknown, is estimated in our study to be 46% and 37%, respectively. Furthermore, increasing TFI total score was significantly associated with increased depression and anxiety scales adding further evidence of the impact of PT on the psychological health of these patients.

**Disclosure of Interest** Nothing to disclose