CIGARETTE SMOKING AND INTRACRANIAL ANEURYSMS: CYTP2A6 GENE SNPS PILOT ANALYSIS IN THE ITALIAN POPULATION

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Aim of Study Our study aimed to investigate the associations between specific single-nucleotide polymorphism (SNPs) of the CYTP2A6 gene and the presence of single or multiple sporadic IAs as well as their rupture with respect to the smoking habit.

Methods 331 Italian patients with sporadic IAs were recruited in a single Institution. We recorded data about the number of aneurysms, clinical onset with subarachnoid hemorrhage (SAH), and smoking habits. Genetic analysis was performed on peripheral blood samples: CYTP2A6 *B2, CYTP2A6 *2, and CYTP2A6 *14 SNPs were analyzed in the patients' group, and in 150 healthy control subjects. Statistical analysis was conducted according to genetic association studies guidelines.

Results The frequency of aSAH was higher in smokers than non-smokers (98% vs 70%), regardless of the CYTP2A6 SNPs pattern. There was a significant correlation between IA rupture and tobacco consumption in patients with the heterozygous CYTP2A6 *B2 allele (p=0.0001). All patients carrying the heterozygous CYTP2A6 *14 allele had an aSAH event (100%), independently of smoking habits.

Conclusion A cigarette smoker carrying a fully active CYTP2A6 enzyme (heterozygous *B2 allele) may have an increased risk of IA rupture, compared to people having functionality less active variants: further investigation on a larger sample is needed to verify this result. The role of the heterozygous CYTP2A6 *14 allele in aSAH is yet to be clarified.

Disclosure of Interest Nothing to disclose.

Aim of Study Systematic comparison of treatment failure, flow diverter placement accuracy and procedural time depending on treatment modality (transfemoral robotic vs. manual) on an identical 3D-printed supraopthalthic ICA aneurysm in the Hamburg Anatomic Neurointerventional Endovascular Simulator (HANNES).

Methods Measurement of treatment failure rate (abort of procedure, displaced flow diverter) and procedure time (navigation of parent vessel + deployment) among 4 interventionalist with different manual experience levels (highly experienced to novice). All interventionalist treated the aneurysm robotic-assisted in 50% of the procedures.

Results The identical supraopthalthic ICA aneurysm was treated a total of 32 times (50% robotic-assisted). Failure rate due to technical abort of the procedure or stent displacement was 3/16 (19%) in the manual group, while no failure was recorded in the robotic group. Navigation of the parent vessel was significantly faster in the robotic group (median 37 [IQR 22–47] vs. 83 sec [44–171], p=0.002), while stent deployment was faster in the manual group (median 25 [IQR 17–41] vs. 44 sec [33–65], p=0.026).

Conclusion Robotic-assisted flow-diverter treatment of ICA aneurysms may be associated with lower technical treatment failure rate compared to conventional manual treatment in a true-to-life endovascular simulator. Advantage of the robotic setting seems to be a technically easier navigation of the parent vessel.

Disclosure of Interest Nothing to disclose (for all authors)

BIPLANE PROJECTION FOR INTRACRANIAL ANEURYSM TREATMENTS – SAME, SAME, BUT DIFFERENT?

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Introduction Clear delineation of intracranial aneurysms (IA) on angiographic working projections is essential for endovascular treatment to achieve successful occlusion and avoid complications. However, only little is known about what different interventional neuroradiologists (INRs) understand as optimal biplane IA working projections and how much the chosen working projections differ for a given anatomy.

Aim of Study The aim of our study is to gain a better understanding and objectification of biplane working projections, chosen for endovascular aneurysm treatment between different INRs, to develop an AI-assisted treatment projection optimization considering the possibility of improving head positioning.

Methods Five INRs used a self-developed software solution to simulate the best possible, IA working projection for 20 aneurysms. Due to the heterogeneity between the INRs, 17 biplane and 3 monoplane representative median projections were selected. In the next step, the usability of different viewing angels from 5° to 30° were rated as yes-no question.

SYSTEMATIC COMPARISON OF ROBOTIC-ASSISTED AND CONVENTIONAL MANUAL FLOW DIVERTER TREATMENT OF AN ICA ANEURYSM ON A TRUE-TO-LIFE ENDOVASCULAR SIMULATOR

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Introduction The vascular robotic Corindus Corpath GRX system has been recently used in experimental treatment of cerebral aneurysms. Nevertheless, data on feasibility and safety is limited to case reports. In addition, treatment safety has not yet been systematically compared to manual intervention in anatomically similar aneurysms.