P2.3: SUBCLINICAL ATHEROSCLEROSIS AND CARDIOVASCULAR RISK FACTORS: TEN YEARS OF EXPERIENCE WITH IMT PLUS® IN THE NETHERLANDS

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10.1/m/s from baseline G3. The groups were similar by age and all risk factors. The baseline (154.8±7.3, 79.1±7.1, 10.2, 152.7±12.9, 192.3±8.3 and 149.3±8.1, 91.7±5.6, 0.4 mmHg) and achieved CVP (128.4±7.7, 76.8±8.1, 4.55, 129.5±8.1, 76.8±8.1, 4.55). There was significant difference in baseline PWV G1 15.9±2.5, G2 13.6±1.9, G3 13.6±1.9. Indapamide SR 1.5mg was added in 36.4% 20% and 9.5%, respectively. Correlation and multiple regression analysis revealed the association between PWV decrease and doses of RAAS inhibitors and amlopidine. (r=-0.58, p<0.05) Conclusion: There is modulating effect of target pressure achievement on PWV in hypertensive subjects. PWV reduction is associated with higher doses of RAAS inhibitors and amlopidine.

P2.1 CAROTID PLAQUE MICROVASCULARITY ASSESSED USING DYNAMIC CONTRAST-ENHANCED MRI: COMPARING DIFFERENT REGIONS OF THE VASCULAR WALL

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VASCULAR WALL CONTRAST-ENHANCED MRI: COMPARING DIFFERENT REGIONS OF THE P2.1

Adventitial Ktrans showed weak correlation with plaque Ktrans (r=0.438, p<0.001) and was observed between echogenicity and deformations (r=-0.35, p<0.001 for cap, Sc). Symptomatic plaques had higher difference between cap Ktrans and core Ktrans. Internal deformation coefficient, Cpi=[(cap,SI-core,SI)/(core,SI-base,SI)]>100 was developed to quantify the relative deformation of different plaque segments. Based on ROC-analysis, plaques with Cpi>22.2 were associated with an ischemic event (sensitivity-55%, specificity-87%, AUC=0.693, p=0.0485). Logistic regression confirmed that Cpi>22.2 is an independent predictor of plaque vulnerability, OR=3.7, 95% CI=0.8-22.2, controlling for age, gender, plaque length, degree of stenosis, echogenicity.

Conclusions: Mobility of echolucent plaques exceeds those of hyperecho- genic ones. Difference in mobility between plaque segments may help identify plaque vulnerability.

P2.2 SUBCLINICAL ATHEROSCLEROSIS AND CARDIOVASCULAR RISK FACTORS: TEN YEARS OF EXPERIENCE WITH IMTPLUS® IN THE NETHERLANDS

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Purpose: Atherosclerosis has become a global disease and risk factor mitigation has been a priority in counties like the Netherlands. We assessed the impact of this new approach on cardiovascular subclinical atherosclerosis and cardiovascular risk factors.

Methods: A quantitative standardized sonographic carotid intima media thickness and plaque formation (IMTplus®) were measured for cap, core and base. Internal mechanics of carotid wall and plaques. We hypothesized that vulnerable plaques (IMTplus® categories of category D (100% increased risk) and category E (200% increased risk) in the carotid atherosclerotic plaques, a marker for plaque vulnerability. The main model-parameter, Ktrans, can be assessed in the outer region of the vessel (adventitia) or in the entire vessel wall (including plaque and adventitia) and already showed association with histology and features of plaque vulnerability, respectively. We investigated systematically the correlation between Ktrans of various regions of the vascular wall and their individual correlation with histology as gold standard. Methods: 45 symptomatic patients with 30-99% carotid stenosis underwent 3T DCE-MRI (0.1mmol/kg Gadobutrol, 0.5ml/sec). Quantitative modeling was performed to determine Ktrans of the entire vessel wall, adventitia, and plaque region, separately. For 10 patients, CD31 immunohistochemistry was performed on specimens (containing mainly plaque) removed during carotid endarterectomy to quantify the endothelial microvessel area. Results: Adventitial Ktrans showed weak correlation with plaque Ktrans (r=0.64, p<0.001) and was 17.3% higher (p<0.001), coinciding with decreased uncertainty in parameter estimation (r=0.015). Significant positive correlation between the endothelial microvessel area and adventitial Ktrans (r=0.854, p<0.002), but not from the plaque (r=0.438, p=0.2) was found. Echolucent plaques underwent significantly higher deformations than hyperecho- genic ones (Sc=4.06 vs 3.25, p<0.05) and they had significantly different difference in deformation between cap and core (p<0.05) whereas hyperecho- genic plaques had no difference in deformation between segments (Sc=5.2, 4.2, 2.8 and 3.5, 3.1, 3.2 for cap, core and base of echolucent and hyperecho- genic plaques, respectively). Moderate negative correlations were observed between echogenicity and deformations (r=-0.35, p<0.001 for cap Sc). Symptomatic plaques had higher difference between cap and core Ktrans. Internal deformation coefficient, Cpi=[(cap,SI-core,SI)/(core,SI-base,SI)]>100 was developed to quantify the relative deformation of different plaque segments. Based on ROC-analysis, plaques with Cpi>22.2 were associated with an ischemic event (sensitivity-55%, specificity-87%, AUC=0.693, p=0.0485). Logistic regression confirmed that Cpi>22.2 is an independent predictor of plaque vulnerability, OR=3.7, 95% CI=0.8-22.2, controlling for age, gender, plaque length, degree of stenosis, echogenicity.

Conclusions: Mobility of echolucent plaques exceeds those of hyperecho- genic ones. Difference in mobility between plaque segments may help identify plaque vulnerability.

P2.4 FEASIBILITY OF AORTIC ARCH MECHANICS – A STUDY IN NORMAL SUBJECTS

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There are no data in the literature regarding aortic arch mechanics assessed by 2D speckle tracking (2D-ST) echocardiography.

Purpose: To study the feasibility of measuring vascular mechanics in the aortic arch with 2D-ST echocardiography and to define normal values.

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