Artery 10

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Objective: It was suggested that, in the development of hypertensive microvascular remodeling, a relevant role may be played by laminin and fibronectin vascular content. Aim of this study was to evaluate the amount of fibronectin and laminin within the tunica media of subcutaneous small arteries of normotensive subjects and essential hypertensive patients.

Design and Methods: We have investigated 6 normotensive control subjects and 10 essential hypertensive patients. All subjects were submitted to a biopsy of subcutaneous fat from the gluteal or the anterior abdominal region. Subcutaneous small resistance arteries were dissected and mounted on an isometric myograph, and the tunica media to internal lumen ratio was measured. In addition, the fibronectin and laminin content within the tunica media was evaluated by immunohistochemistry, with image analysis (% of area stained).

Results: As expected, clinic blood pressure values and media to lumen ratio were higher in essential hypertensive patients than in normotensive controls. Fibronectin media content was significantly greater in essential hypertensive patients (7.41±2.28 %), compared with normotensive controls (5.62±0.40, P<0.05). A significant correlation was observed between fibronectin content and media to lumen ratio (r=0.49, P<0.05). No significant difference in laminin media content was observed between groups (3.7±1.71 % in essential hypertensive patients, 5.63±1.79 % in normotensive controls).

Conclusions: Our results indicate that, in small resistance arteries of patients with essential hypertension, fibronectin, but not laminin media content is increased. Fibronectin might be therefore involved in the development of small resistance artery remodeling in humans.

P11.08 EVALUATION OF ARTERIAL STIFFNESS IN CHRONIC KIDNEY DISEASE (CKD) STAGE 2-5 BY PULSE WAVE MEASUREMENTS AND AMBULATORY ARTERIAL STIFFNESS INDEX (AASI)

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Purpose: To study arterial stiffness in CKD by AASI compared to Augmentation Index (AIX) and aortic pulse wave velocity (aPWV). To study the intra-patient reproducibility of AASI in CKD.

Methods: Patients were studied 2 days within 2 weeks. Double application tonometry recordings of the radial pressure wave form and aPWV and 24-h ambulatory blood pressure measurements were done. AASI was calculated as 1 minus the regression slope of diastolic over systolic blood pressure. CKD stage was determined by estimated glomerular filtration rate. Spearman's correlation coefficient (SCC) was used for evaluating correlations. Day-to-day reproducibility was evaluated by the intra-class correlation coefficient (ICC).

Results: 68 patients (M50:F18), median age 63 years (range 30-79), with CKD stage 2 (n=17), stage 3 (n=22), stage 4 (n=20) and stage 5 (n=9) were studied. Mean±SD AASI was 0.44±0.15, mean AIX was 28.2±10.4% and mean aPWV was 9.4±5.1 m/s. With no significant differences among the stages. The SCC between AASI and AIX was 0.320 (P=0.01), between AASI and aPWV it was 0.643 (P=0.0001) and between AIX and aPWV it was 0.346 (P=0.006). ICC_AASI was 0.775 (95% CI: 0.630-0.841) with even greater reproducibility in CKD stages 4-5 (ICC=0.860).