Abstract: P488
Circulating markers of vascular wall lesion in asymptomatic atherosclerosis

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Background: As systemic inflammation may play an important role in the pathogenesis of atherosclerosis (AS) and coronary heart disease (CHD) there is interest in the relevance of circulating markers of vascular wall lesion and inflammation to asymptomatic AS (AAS) in comparison to CHD.

Purpose of our investigation was to assess the diagnostic and prognostic value of numerous biomarkers reflecting immune inflammation in prediction of clinical manifestation of CHD.

Methods: 120 persons with determined AAS were observed during 3 years. Baseline levels of pro-inflammatory cytokines (IL1ß, IL6, TNF-a) and antibodies against connective tissue components (collagen – anti-ab, hyaluronic acid – antiHA-ab, chondroitin sulfate antiCS-ab) were evaluated by ELISA. Control group included 117 pts with acute (47 pts) or chronic (70 pts) CHD, and 52 pts with AH without clinical and instrumental data consistent with AS. In controls the same markers were investigated. In AAS group cardiovascular events (CVE) including CV death, acute coronary syndrome and stroke were analyzed. On the basis of statistical methods including regression and ROC-analysis we determined the most informative predictors of CVE in AAS group.

Results: We revealed significant elevation of investigated markers in AAS group in comparison to AH group. On the other hand the levels of pro-inflammatory cytokines and auto-antibodies in AAS were lower than in CHD, especially in ACS (p<0.01). The baseline IL1ß levels> 110pg/ml have demonstrated highest predictive value regarding ACS and CV death in AAS group (AUC=0.625, AUC=0.614 respectively). TNF-a levels>20 pg/ml was associated in AAS with increased risk of CV death (AUC=0.607). Concerning auto-antibodies levels the most informative marker in ACS prediction was anti-ab > 0.23 µg/ml (AUC=0.658) and in CV death prediction was antiHA-ab > 2.55 u/ml (AUC=0.612).

Conclusions: Several different pro-inflammatory cytokines and anti-connective tissue antibodies are each associated with CHD risk and sever CVE in persons with AAS. The findings lend support to the immune inflammation hypothesis in vascular disease and give opportunity to use proposed biomarkers in diagnostic and prognostic purposes.