Vascular Medicine

NOVEL BIOMARKERS FOR CRITICAL LIMB ISCHEMIA: ROLE OF ADVANCED GLYCATION ENDPRODUCTS

Poster Contributions
Poster Sessions, Expo North
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Session Title: Markers to Assess Peripheral and Carotid Artery Disease: Rapid Advances
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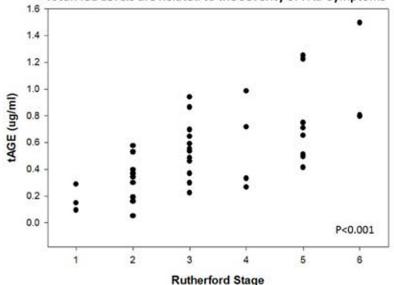Presentation Number: 1297-161

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Background: The purpose of this study was to examine the relationship between plasma levels of advanced glycation endproducts (AGEs) and the clinical and angiographic characteristics of patients with symptomatic PAD. We hypothesized that total AGE levels (tAGE) and the specific moiety (N´-carboxymethyllysine [CML]), would be related to the presence of diabetes, correlated with the ankle brachial index (ABI), and related to the presence of more extensive lower extremity atherosclerosis.

Methods: 40 consecutive patients with symptomatic lower extremity PAD undergoing invasive evaluation were enrolled. Clinical history, angiographic data, and plasma levels of tAGE, CML, and hsCRP were obtained.

Results: in multivariate analyses, there were significant relationships noted between tAGE levels and the presence of critical limb ischemia (CLI) ($r2=0.195$, $P=0.003$), Rutherford stage ($r2=0.351$, $P<0.001$, FIGURE), and the AVG below the knee (BTK) score ($r2=0.119$, $P=0.006$). The presence of CLI ($r2=0.154$, $P=0.012$) and the Rutherford stage ($r2=0.194$, $P=0.003$) were associated with CML levels.

Conclusions: We demonstrate a relationship between tAGE levels and the symptom profile of patients with PAD. We also demonstrate an association between tAGE and below the knee angiographic severity of atherosclerosis. Both tAGE and CML levels were related to the presence of CLI. These data suggest that AGE levels may reflect the severity of PAD, particularly in CLI.

Total AGE Levels are Related to the Severity of PAD Symptoms