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Triglycerides and aortic pulse wave velocity in patients with chronic inflammation

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In a work published in a recent issue of the Egyptian Heart Journal,[1] Youssef et al. found that carotid stiffness was increased in subjects with rheumatoid arthritis, a disease characterized by chronic inflammation, and associated with disease duration. This finding is of clinical interest because support current concepts that chronic inflammation may lead to arterial stiffening.[2] Moreover, an association between arterial stiffness and triglycerides was also confirmed in subjects with rheumatoid arthritis, as previously reported.[3] Similar results were also reported in a sample of the general population and in patients with metabolic syndrome.[4,5] The relationship between triglycerides and arterial stiffness may involve local and systemic inflammation, oxidative stress and endothelial dysfunction. In this regard, triglycerides are associated with C-reactive protein levels in patients with chronic inflammation.[6]

We have recently reported that arterial stiffness and wave reflection are increased in patients with inflammatory bowel disease (IBD),[7,8] a model of chronic inflammation characterized by low traditional cardiovascular risk factors and increased cardiovascular risk (the IBD paradox[9]), and associated with inflammation.[10] Here, we reanalyze data of our recent individual participant data meta-analysis[10] to test whether aortic pulse wave velocity (aPWV) was associated with triglycerides in patients with IBD. All analyses were performed in 111 participants with ulcerative colitis, 125 with Crohn's disease, and 147 control patients without missing data. The aPWV values were standardized for the patients with IBD and their respective control patients enrolled in each study included in these analyses by using the standard score (z-score).[10] Because aPWV and triglycerides values were positively skewed, we used $\log_e$-transformed in the analyses. aPWV was associated with triglycerides at univariate analysis (Fig. 1). This association was confirmed (b = 0.25 z score; 95% confidence interval, 0.03–0.47 z

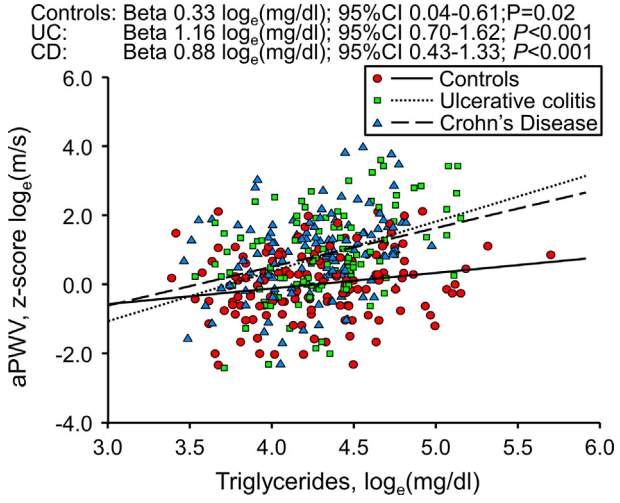

Fig. 1. Association between aortic pulse wave velocity (aPWV) and triglycerides in control subjects and in patients with ulcerative colitis (UC) or Crohn's disease (CD).

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score [$P = 0.02$]) in an outlier-robust multivariate linear regression model adjusted for age, sex, mean blood pressure, IBD, and study of origin. Longitudinal studies are needed to better clarify in patients with IBD the role of triglycerides on aortic stiffening.

Conflicts of interest

None.

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