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Arterial Stiffness Is Not Yet Increased In Children And Adolescents With Inflammatory Bowel Disease

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Introduction: arterial stiffness increases with the natural aging process. However, it can be accelerated by different factors, including chronic inflammation. This has largely been proved in adult population with various inflammatory diseases including inflammatory bowel disease (IBD), but the data on the initial changes in childhood are still scarce.

The aim of this study was to determine whether there is detectable effect of the inflammation in IBD to the arteries as early as in childhood.

Methods: we used PWVao (aortic pulse wave velocity) measured by Arteriograph (Tensiomed) as a marker of arterial stiffness to detect possible subclinical changes in the arterial wall. We examined the total of 70 children (aged 7 to 18 years -mean $14,39 \pm 2,93$ years) divided into three groups – patients with active IBD (15 patients), those in clinical remission (35 patients) and healthy controls (20 patients). We used two-tailed t-test for comparisons.

Results: comparing PWVao in patients with IBD (mean $6,15 \pm 0,90$ m/s) with PWVao in healthy controls (mean $6,02 \pm 1,01$ m/s), no significant difference was found ($p=0,83$). Likewise, we found no difference in arterial stiffness comparing children with active disease (mean $6,09 \pm 0,74$ m/s) and those in the clinical remission (mean $6,21 \pm 0,86$ m/s) ($p=0,50$). We came across similar results comparing PWVao in patients with active disease with that in control group. Arterial stiffness was unchanged in patients with Crohn disease (the total of 30 patients) (mean $6,18 \pm 0,66$) compared to healthy controls ($p=0,93$). The same was observed comparing PWVao in patients with Ulcerative colitis (the total of 18 patients) (mean $5,94 \pm 1,11$) and in controls ($p=0,44$). In two patients the type of IBD is not yet determined.

Conclusions: arterial stiffness in IBD patients at this early age is still unchanged. This suggests that effective IBD treatment in childhood could timely prevent accelerated vascular aging in IBD patients in adulthood.