

Shorter Telomeres in Juvenile Idiopathic Arthritis Patients and its Relation with Arterial Stiffness

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INTRODUCTION: The Juvenile Idiopathic Arthritis (JIA) is a prevalent disabling chronic childhood autoimmune disease. Regardless of the fluctuations in disease activity, children with JIA suffer from daily symptoms such as pain, stiffness and fatigue. Telomere length has been postulated as an early indicator of premature cellular aging and could be a consequence of a proinflammatory environment. Chronic diseases as JIA might exacerbate this condition. **OBJECTIVE:** In this regard, the aim of this work was to measure the effect of arterial stiffness and its association with telomere length (TL) in patients with JIA. **MATERIAL AND METHODS:** Twenty-four JIA patients and 22 gender/age matched healthy controls were included. Patients with obesity, systemic hypertension, diabetes, renal impairment and other cardiovascular disease risk factors were excluded. Arterial stiffness was assessed by the non-invasive method pulse wave velocity (PWV) with an oscillometric device (CardioSDynaMAPA). Genomic DNA was purified from peripheral blood mononuclear cells and TL was quantified by qPCR. Inflammatory activity was assessed by the Juvenile Arthritis Disease Activity Score (JADAS). **DISCUSSION AND RESULTS:** We included JIA patients with oligoarticular (65,2%) and polyarticular subtypes. The females accounted for 73.9% and 82.6% were caucasian. Median age was 15±6.3 years and median disease duration was 9 years. Median score of JADAS activity was 8. PWV values were normal in all JIA patients (5.1±0.2 [5.0-6.1]). Median TL in JIA patients was 0.78 (95% CI [0.65-1.03]) and in controls 1.09 (95% CI [0.74-2.04]) (P=0.025). There was no correlation between TL and age, gender, disease duration, JADAS and PWV (P>0.05) in patients with JIA. **CONCLUSION:** Arterial stiffness was not elevated in a representative sample of patients with long term and high disease activity of JIA. Compared to healthy controls, TL was shortened in the JIA group, with no correlation with disease activity, age, gender and disease duration.

Key Words: Arterial stiffness, juvenile idiopathic arthritis, telomere shortening
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