



### **Is there a cross-talk between upper limb claudication and hand strength in Takayasu arteritis?**

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#### **BACKGROUND**

Limb claudication is a common symptom in Takayasu arteritis (TA) and leads to discomfort and inability to perform the routine activities. In addition, most patients complain about hand muscle weakness. To date, no studies have correlated the limb claudication and the intensity of the hand strength. Therefore, the aim of the study was to evaluate hand grip strength and its correlation with upper limb claudication and also vessel imaging exams.

#### **MATERIALS AND METHODS**

This is a cross-sectional, single-center study, from 2018 to 2019, that compared 36 consecutive adult female patients with TA (1990 ACR classification criteria) with 36 aged, gender and index mass body (BMI)-matched healthy individuals (CTR). The follow exams were applied: hand strength assessed by the handgrip test in both upper limbs; functional capacity measured by the Health Assessment Questionnaire (HAQ); upper limb claudication symptoms by the patients' self-reported form; disease activity by the Indian Takayasu Clinical Activity Score (ITAS). Additionally, the vessel imaging (angiotomography) was reviewed and blood pressure was evaluated.

#### **RESULTS**

The patients mean age was  $43.8 \pm 9.5$  years and their median disease duration was 13.0 (7.0-16.8) years. Fourteen (38.9%) patients had disease activity, according to their ITAS scores. Compared to CTR, the patients with TA showed reduced strength in the left hand ( $22.9 \pm 5.9$  vs.  $26.3 \pm 5.6$  kg;  $P=0.014$ ) and increased HAQ scores [ $0.50$  ( $0.12-0.87$ ) vs.  $0.00$  ( $0.00-0.00$ );  $P<0.001$ ]. Both groups' blood pressure was comparable. Among patients with TA, the left-hand strength correlated with right-hand strength (Spearman correlation:  $\rho=0.644$ ;  $P<0.001$ ) and correlated inversely with HAQ scores ( $-0.584$ ;  $P<0.001$ ). Moreover, both left and right-hand strength were not correlated with any vessel narrowing, stenosis imaging, blood pressure level or limb claudication.

#### **CONCLUSION**

The reduction of strength in the left upper limb may be inversely related to the functional capacity of patients with TA. However, this reduction appears not to be related to classical vessel claudication, vessel imaging or blood pressure. Therefore, other factors not yet elucidated may be involved in hand strength.

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