

Carotid-femoral pulse wave velocity in patients with Wegener's granulomatosis

Wegener granülomatozu hastalarında karotis-femoral nabız dalga hızı

Wegener's granulomatosis (WG) is a clinical syndrome characterized by an uncommon type of necrotizing granulomatous vasculitis (1). The cause of Wegener's granulomatosis is unknown. It usually affects the medium and small-sized arteries of the lungs, the nasal sinuses, and the kidneys (2). Cardiac involvement of the WG is reported as 15% in a study of 20 patients with WG in Turkey (3). In the literature, higher prevalence of cardiac involvement has also been reported, up to 44% (4). The large vessel involvement (such as aortic involvement) is thought to be rare in WG (5). The most common cardiac involvements are coronary arteritis and pericarditis (6). However, myocarditis, vasculitis and arrhythmias may also occur (7). In patients with cardiac involvement in WG, coronary arteritis was reported in 50% of all cases (6).

Some cardiac problems such as myocardial infarction may be explained by arteritis affecting large epicardial vessels in WG (8). It was suggested that the physiopathology of endothelial damage in WG could be related with the activation of neutrophils and, thus, the presence of anti-neutrophil cytoplasmic antibodies (9). It has been considered that cardiac involvement in WG may be either subclinical or it might be the main reason for the symptoms development (10).

In this issue of the Anatolian Journal of Cardiology, a study by Yıldız et al (11) is published, which compared carotid-femoral pulse wave velocity in patients with WG and control group. The authors have reported increased carotid-femoral pulse wave velocity in patients with WG relative to controls. Pulse wave velocity, as a determinant of arterial stiffness, is positively related with the incidence of cardiovascular events (12). In this study, none of the patients had been diagnosed with cardiac involvement; however, a disturbance in the pulse wave velocity in patients with WG was demonstrated. Further longitudinal studies in patients with WG may be helpful to investigate the clinical importance of high pulse wave velocity in WG.

Aortic pulse wave velocity is a measure of aortic stiffness. According to the findings of this study, as the authors focused on, aortic stiffness in these patients may result from the endothelial damage and/or atherosclerosis. The findings of this study are important to attract attention to the aortic stiffness in patients with WG. Additionally, it raises the question: "Is the high aortic pulse wave velocity a predetermined factor for cardiac involvement in patients with WG?" Although aortic pulse wave velocity is a noninvasive technique for obtaining a measure of arterial stiffness, measurements were affected by some factors including hypertension, aging and oxidative stress (13). Nowadays, this technique is preferred to understand the physiopathology of arterial stiffness and distensibility rather than using it as a measurement technique in clinical practice.

Another important finding is the significant relationship between pulse wave velocity and erythrocyte sedimentation rate that has been reported in the present study despite of small study population

(11). Also, when both the patients and the control groups were evaluated together, a relationship was found between the heart rate and pulse wave velocity. This relationship was not revealed when the patient's group was evaluated separately. For this reason, the significant relationship, which was determined with the evaluation of the patient and the control groups together cannot indicate a relationship between heart rate and pulse wave velocity in WG.

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