Abstract: P2182

Daily monitoring parameters of arterial stiffness and central aortic pressure in patients with ankylosing spondylitis

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Background. In recent years the increased arterial stiffness in Ankylosing Spondylitis (AS) was shown. However today this issue has not been adequately studied.

Purpose: To investigate the central aortic pressure and arterial stiffness parameters during daily monitoring in patients with AS.

Methods. 49 patients with AS (mean age 39.6 ± 10.6, 38 men, 11 woman) were examined. AS Disease Activity Score (ASDAS-CRP) was 3.11±0.55. Duration of AS was 5.87 ±4.76 years. X-ray stage sacroiliac joints (according Modified New York Criteria) was 2.59±1.42. The control group included 24 healthy nonsmokers. The groups were similar in age, sex and daily peripheral blood pressure parameters. 10 patients with AS had history of arterial hypertension, however, at the time of inclusion in this study their blood pressure was stabilized. 18 patients with AS had smoking history, the smoking index was 18.05±11.57 pack-years. The ambulatory (daily) monitoring of the peripheral, central aortic pressure and parameters of arterial stiffness were made by device with Vasotens technology. This device uses an oscillometric method of blood pressure measurement with automatic calculation of aortic pressure parameters. For statistical analysis we used Mann-Whitney criteria and Spirmen correlation method. The study was based on GCP principles.

Results. Increased levels of aortic systolic blood pressure (SBP) (114.8±12.4 vs 106.9±6.9, ?=0.006), aortic diastolic blood pressure (DBP) (78.5±9.3 vs 68.7±11.1, ?= 0,0001) were determined in patients with AS. Patients with AS demonstrated the increase of minimum, medium and maximum pulse wave velocity (PWV) compared to healthy individuals on 7.44% (p = 0.048), 15.78% (p = 0.0001) and 26.17% (p = 0.0001), respectively. Ambulatory Arterial Stiffness Index (ASI) in patients Ankylosing Spondylitis was higher compared with control group on 59.09% (p=0.002). Subendocardial viability ratio (SERV) medium per day was lower compared with control group on 9.4% (p=0,0001). PWV medium per day was directly correlated with total cholesterol (r= 0,41; p=0,026). SERV maximum per day was negative correlated with X-ray stage of sacroiliitis (r= 0,38; p=0,008). SERV medium per day was negative correlated with C-reactive protein (r= - 0,40; p=0,017), and with ASDAS-CRP (r= - 0,43; p=0,003). Smoking index was directly correlated with aortic SBP minimum per day (r= 0,49; p=0,044), aortic SBP medium per day (r= 0,52; p=0,032), aortic pulse pressure minimum per day (r= 0,55; p=0,021), aortic augmentation pressure (r= 0,62; p=0,017). The aortic blood pressure profiles were non-dipper on 57,15%, dipper on 30,61%, over-dipper and night-piker on 6,12% respectively in patients with AS. Conclusions: Increasing indicators of arterial stiffness were determined in patients with AS. The relationship between clinical and laboratory data and arterial stiffness parameters was demonstrated. The aortic non-dipper type was dominated in the patients with AS.