CORRELATIONS AMONG VASCULAR ULTRASOUND ABNORMALITIES OF THE TEMPORAL AND LARGE ARTERIES IN GIANT CELL ARTERITIS

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Background: Vascular ultrasound (VUS) is a sensitive and specific method for evaluating giant cell arteritis (GCA). Understanding patterns of temporal artery (TA) and large artery involvement may be important for aiding in diagnosis.

Objectives: To determine correlations among VUS abnormalities in patients with GCA.

Methods: We performed a retrospective study among 503 patients that underwent VUS to evaluate suspected or known GCA at an academic medical center, 2013-2017. Demographics, clinical features, VUS reports, and pathology data were extracted through electronic medical record review. Trained cardiovascular ultrasonographers imaged the right and left temporal, common carotid (CCA), subclavian (SCA), and axillary (AXA) arteries. The superficial temporal arteries (STA) and their frontal (TA-F) and parietal (TA-P) branches were abnormal if halo sign or hyperechoic wall thickening was present; the CCA, SCA and AXA were abnormal if those findings and/or stenosis or occlusion were present. Cardiovascular medicine physicians trained in VUS interpreted studies as acute arteritis, no arteritis, or hyperechoic wall thickening without acute arteritis. Abnormalities in the STA, TA-F and parietal branches were abnormal if halo sign or hyperechoic wall thickening was present; the CCA, SCA and AXA were abnormal if those findings and/or stenosis or occlusion were present.

We created composite variables representing each TA and its branches, and the left and right CCA, SCA, and AXA to test correlations between temporal and large arteries. Significance was determined using Fisher's exact test with Bonferroni correction.

Results: Among 139 patients, 50% were diagnosed before VUS (median disease duration 17 months). Median age at VUS was 73 years; 75% were female and 93% White. Forty patients (29%) had TA biopsy-proven GCA; an additional 14 (10%) had biopsy-proven giant cell arteritis. Prevalence of abnormalities of TAs and large arteries were similar (20% of right and 27% of left TAs; 20% of right and 24% of left large arteries). VUS was consistent with acute arteritis in 32%, no arteritis in 53%, and hyperechoic without acute arteritis in 15%. Abnormalities in the STA, TA-F and parietal branches were abnormal if halo sign or hyperechoic wall thickening was present; the CCA, SCA and AXA were abnormal if those findings and/or stenosis or occlusion were present.

Conclusion: Polymyalgia rheumatica (PMR)/Giant cell arteritis (GCA), common inflammatory diseases, are associated with increased risk of aortic stiffness, possibly due to an inflammatory process.1,2

Objectives: To evaluate the effect of steroid treatment on aortic stiffness in patients with PMR/GCA.

Methods: This is an ongoing 1-year prospective cohort study. 37 consecutive patients with newly diagnosed PMR/GCA were included. Aortic pulse wave velocity (PWV) and aortic augmentation index normalized to heart rate of 75 beats per minute (AIX@75) were measured at baseline and subsequently at 1st and 4th months of treatment initiation with oral prednisolone.

Results: Of 37 patients, 3 pts. were excluded from the study because of lack of interest or a change in the initial diagnosis. Of all included pts. 61.8% were female and mean age was 71 (69-74) years. At diagnosis, 24 pts. presented with pure PMR symptoms, 2 pts. with pure cranial GCA, 8 pts. with concurrent PMR and GCA. The mean of early aortic augmentation index normalized to heart rate of 75 beats per minute (AIX@75) was measured at baseline and subsequently at 1st and 4th months of treatment initiation with oral prednisolone.

REFERENCES: