AORTIC STIFFNESS IN SYSTEMIC LUPUS ERYTHEMATOSUS BY TRANSESOPHAGEAL ECHOCARDIOGRAPHY

ACC Poster Contributions
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Background: To assess aortic stiffness by transesophageal echocardiography (TEE) and its relation to aortic atherosclerosis in systemic lupus erythematosus (SLE).

Methods: 49 patients with SLE, 94% women, with a mean age of 38 years and 21 gender and age-matched healthy controls underwent clinical and laboratory evaluations and multiplane TEE to assess stiffness, intima-media thickness (IMT), and plaques of the proximal, mid, and distal descending thoracic aorta.

Results: Patients as compared to controls had higher blood pressures, lower hematocrit, higher creatinine and proteinuria, and lower albumin (all p ≤0.05). Stiffness at the 3 levels of the aorta assessed by the pressure-strain elastic modulus was higher in patients than in controls after adjusting for age (overall, 8.2 ± 4.1 versus 6.1 ± 2.5 Pascal units, respectively, p = 0.01, see Figure). Age of onset of SLE, total SLE damage score, and mean arterial pressure during TEE were the independent predictors of aortic stiffness (all p ≤0.01). Although patients had higher aortic IMT values and had more plaques than controls (both p ≤0.04), neither IMT nor plaques were predictive of aortic stiffness in patients with SLE.

Conclusions: Aortic stiffness in SLE: 1) is higher than matched controls; 2) is predicted by age of onset of SLE, total SLE damage score, and mean arterial blood pressure; and 3) occurs independently of aortic atherosclerosis. Thus, aortic stiffness is another form of SLE-associated vasculopathy.

[Graph showing aortic pressure-strain elastic modulus]

Adjusted for age, p = 0.016 for group and p = 0.04 for location

Location: 1 = Proximal, 2 = Mid, 3 = Distal Descending Aorta