

Assessment of arterial involvement by Doppler ultrasound in systemic sclerosis patients at Hospital das Clínicas, Universidade Federal de Pernambuco

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Abstract

Introduction: Systemic sclerosis is a diffuse disease of the connective tissue. Although changes in microcirculation are one of the markers of systemic sclerosis, impairment of medium- and large-caliber arteries may also be present and has not been widely recognized.

Objective: To evaluate occurrence and distribution of changes in medium- and large-caliber arteries in patients with systemic sclerosis using Doppler ultrasound and the ankle-brachial index, as well as the association of these findings with clinical form, demographic characteristics, time of disease course, Raynaud's phenomenon, digital changes, limb ulcers, phalanx reattachment and amputation. Risk factors for atheromatous disease (smoking, hypertension, diabetes mellitus and dyslipidemia) and history of atheromatous disease were also analyzed.

Methods: Prospective case study series of 20 patients (19 women), mean age 46.30 years. All patients had objective Raynaud's phenomenon; 85% had the diffuse clinical form of systemic sclerosis; 55% had digital pulp alteration; 15% had current limb ulcer; 25% had their phalanx reattached; and 70% had one to four risk factors for atheromatous disease. Doppler ultrasound was used to study the aortic and carotid arteries of the lower and upper limbs in order to assess thickening of the intimal-medial complex, presence of plaques and aneurysms. The ankle-brachial index was also measured.

Results: The ankle-brachial index was normal for all patients, and 12 (60%) of these had changes in medium- and large-caliber arteries according to Doppler ultrasound: nine patients (45%) had changes in the aorta, six (30%) in the carotid arteries, one (5%) in the upper limb arteries, and seven (35%) in the lower limb arteries. There was an association between changes in medium- and large-caliber arteries and changes in digital pulps ($p = 0.0045$). There was a significant association between changes in medium- and large-caliber arteries and current changes in digital pulps.

Conclusions: Changes in medium- and large-caliber arteries were found in 60% of patients using Doppler ultrasound, but not by the ankle-brachial index, which was normal for all patients. There was a significant association between macrovascular disease and current changes in digital pulps, which did not occur with the other variables.

Keywords: Systemic sclerosis, atherosclerosis, arteriosclerosis, ultrasonography, Doppler ultrasound.

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