

Value of nail fold video capillaroscopy and carotid intima media thickness in assessment of micro and macro-vascular disease in systemic sclerosis patients

Aim of the work: To assess micro and macro-vascular involvement in systemic sclerosis (SSc) patients and their possible association with variable disease parameters using non invasive imaging techniques. Patients and Methods: Thirty (SSc) patients and twenty four controls were enrolled. Skin thickness was assessed using modified Rodnan skin score (mRss). Nailfold videocapillaroscopy (NVC) was employed to detect microangiopathy and carotid intima media thickness (IMT) was assessed by power Doppler ultra sound. Results: Patients were 96.7% females and 3.3% males, mean age was 41.6 ± 11.5 years, with mean disease duration 4.7 ± 3 years. 73.3% had limited form while 26.7% had diffuse form. The mean mRss was 18.6 ± 8.5 . Microangiopathic patterns detected by NVC were: early, active and late (36.65%), (26.7%) and (36.65%) respectively, and structural alterations included: scar (70%), large capillaries (60%), hemorrhage (41.4%), scanty (36.7%), branched (20%), mega capillaries (16.7%), and tall (10%), but neither crossed nor ramified capillaries were detected. The mean IMT was higher in patients (1 ± 0.2 mm) compared to controls (0.7 ± 0.09 mm) ($p < 0.001$). A significant inverse correlation was found between high density lipoprotein (HDL) with capillary length ($r = 0.27$, $p = 0.05$), arterial and venous loop diameters ($r = 0.29$, $p = 0.03$)($r = 0.41$, $p = 0.003$) respectively. On linear regression for prediction of HDL, only the relation to venous loop was significant ($p = 0.03$). Atherosclerosis on carotid doppler showed significant association with arterial loop diameter ($p = 0.04$), venous loop diameter ($p = 0.02$) and capillary length ($p = 0.001$). Conclusion: Micro- and macro-vascular disease in SSc are different entities that do not simultaneously exist in every patient, although endothelial dysfunction can eventually lead to both, and should be meticulously evaluated.