QUANTITATIVE ANALYSIS OF CHOROIDAL PARAMETERS IN PATIENTS WITH SYSTEMIC SCLEROSIS

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Purpose: Systemic sclerosis (SSc) is a rare multisystemic autoimmune disorder characterized by microvascular damage and generalized fibrosis. The choroid has the highest blood flow per volume of the entire body which renders it particularly susceptible to systemic vascular changes, such as in SSc. Much of the published data concerning SSc and the choroid alterations consists of small case studies. This review aims to provide an overview of the current level of evidence for the role of choroidal quantitative parameters in patients with SSc as a potential disease biomarker.
Materials and Methods: A review of literature was performed using Pubmed without limitation on publication date. Outcomes of interest included optical coherence tomography (OCT)- based quantitative measurements of choroidal parameters: mean macular choroidal thickness and volume, choroidal vascularity index (CVI) in patients with systemic sclerosis compared to health controls.
A combination of following keywords was used: "Systemic Sclerosis", "Scleroderma" and "Choroid". We solely included case-control studies that investigated specific choroidal quantitative parameters by using OCT in SSc patients compared to healthy controls.
Results: Eleven out of 43 articles were retained. Lower choroidal thickness and volume in the SSc compared to controls were observed in 10 articles out of 11. In terms of CVI, this parameter was analyzed only in 2 articles and it was significantly higher in SSc patients. No significant differences in choroidal parameters were found within the SSc subtypes.
Conclusion: Our review of literature demonstrates proven associations between SSc and choroid quantitative parameters, mainly in terms of choroidal thickness and volume. Because of a paucity of case-control studies investigating the choroidal vascularity index parameter, future standardized prospective studies are needed to confirm the previous published results.