CAPILLAROSCOPY AND INTERSTITIAL LUNG DISEASE IN SYSTEMIC SCLEROSIS: A SYSTEMATIC REVIEW

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Background: At this very moment, no systematic review evaluating the role of nailfold videocapillaroscopy (NVC) in patients with systemic sclerosis (SSc) has been published.

Objectives: To systematically identify and review all available literature evaluating the role of NVC in ILD in SSc, according to the definitions of the EULAR study group on microcirculation in Rheumatic diseases.

Methods: A systematic literature search was performed in Pubmed, EMBASE and Web of Science. All retrieved articles were screened on title, abstract and full-text level. Reference lists and google scholar were additionally searched. Original research papers that documented an association between NVC and ILD in SSc were included. Subsequently, NVC parameters were subdivided in quantitative (density, dimension, morphology and haemorrhages), semi-quantitative (NVC score) and qualitative assessment (presence, severity and worsening of scleroderma pattern).

Results: The systematic search identified 299 unique search results, of which 145 references were withheld after title screening. Abstract screening resulted in 145 references were included in the final analysis after full-text screening (n=13) and bibliographic search (n=3) (see table 1). Regarding cross-sectional studies, density has been evaluated in 5 studies and has been unequivocally associated with DLCO/AV, DLCO, FVC and inversely with GGO. Dimension has been evaluated in 4 studies, with no unequivocal results. Morphology has been evaluated in 1 study and has been unequivocally associated with HC on HRCT. Haemorrhages have not been evaluated. NVC score has been evaluated in 2 studies and has been unequivocally associated with GGO on HRCT and total lung score. Presence of scleroderma pattern has been evaluated in 3 studies and has been unequivocally associated with reduction of DLCO and severe lung involvement. Severity of scleroderma pattern has been evaluated in 4 studies and has been unequivocally associated with reduction of DLCO and FVC, ILD on chest X-ray and lung involvement. Regarding longitudinal studies, density has been evaluated in 2 studies and has been unequivocally associated with reduction of DLCO. Dimension, morphology and haemorrhages have all been evaluated in 1 study, with no association. NVC score has not been evaluated. Presence of scleroderma pattern has been evaluated in 1 study and has been unequivocally associated with reduction of DLCO, ILD on HRCT and future severe lung involvement. Worsening of scleroderma pattern has been evaluated in 1 study and has been unequivocally associated with future lung involvement.

Conclusions: This systematic literature review, on behalf of the EULAR study group on microcirculation in Rheumatic diseases, is the first to investigate unequivocal associations between ILD and capillaroscopic alterations in a standardised way. Unequivocal associations were found in cross-sectional studies between density, morphology, NVC score, presence and severity of scleroderma pattern and in longitudinal studies between density, presence and worsening of scleroderma pattern and ILD-defining parameters in SSc patients.

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