Combined peripheral and central ultrasound for diagnosis of PAH-SSc patients.

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Abstract

Background: Systemic Sclerosis (SSc), an intricate autoimmune disease causing tissue fibrosis, introduces cardiovascular complexities, notably pulmonary hypertension (PH), affecting both survival and quality of life. This study centers on evaluating echocardiographic parameters and endothelial function using Flow Mediated Dilatation (FMD) in SSc patients, aiming to differentiate those with and without pulmonary arterial hypertension (PAH). The emphasis lies in early detection, given the heightened vulnerability of the right ventricle in the presence of PH. Methods: 59 SSc patients and 48 healthy subjects participated, undergoing clinical examinations, echocardiography, FMD assessments, blood analyses, and, when necessary, right heart catheterization (RHC). Results: SSc-PAH patients displayed lower FMD, increased TAPSE <18 mm, RA area >18 cm², and TRV >280 cm/sec compared to those without PAH and healthy controls. Resting Resistivity Index (RI) was higher in SSc patients, with no significant difference between those with and without PAH. Lower FMD% serves as a predictive marker for adverse cardiovascular outcomes in both SSc and SSc-PAH patients. Stratification by TRV levels and PAH presence reveals notable FMD% variations, emphasizing its potential utility. Conclusions: Early identification of endothelial dysfunction and echocardiographic parameters, such as TAPSE and TRV, could aid in predicting right ventricular dysfunction and PAH in SSc patients.

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