

## 論 文 要 旨

**Predictors of exercise-induced pulmonary hypertension in patients  
with connective tissue disease**

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**Background:** Screening and early detection of pulmonary arterial hypertension (PAH) in connective tissue disease (CTD) is currently recommended for early treatment. Exercise induced pulmonary hypertension (EIPH) is thought to be a potential risk of developing resting pulmonary hypertension. However, accurately diagnosis of EIPH is needed hemodynamics by right heart catheterization during exercise. Therefore, we compared various parameters of EIPH group with non-EIPH group in patients with CTD. This study aimed to investigate non-invasive predictors of EIPH.

**Methods and Results:** A total of 162 consecutive patients with CTD who received screening of PAH was studied. Thirty-four patients with suspected PAH received right heart catheterization (RHC). Twenty-four patients without PAH underwent RHC during exercise, and they were divided into the EIPH group (n =7) and the non-EIPH group (n = 17). We compared parameters between the EIPH and non-EIPH groups. Exercise tolerance such as 6-minute walk distance and peak VO<sub>2</sub>/kg in the EIPH group was lower than that in the non-EIPH group. For Hemodynamics, pulmonary artery pressure, right atrial pressure, and vascular resistance in the EIPH group were significantly higher than those in the non-EIPH group. In echocardiography, RV Tei index in the EIPH group was significantly higher than that in the non-EIPH group (EIPH vs non-EIPH = 0.42 [0.41, 0.47] vs 0.25 [0.20, 0.32],  $P = 0.007$ ). The receiver operating characteristics curve showed a cut-off value of RV Tei index (0.41) with a sensitivity of 0.857 and specificity of 0.882.

**Conclusion:** RV Tei index might be a feasible predictor of EIPH in CTD patients.