

## **Factors associated with right ventricular dysfunction among patients with hypersensitivity pneumonitis**

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**Statement of the Problem:** Cardiovascular diseases are the most common comorbidities among patients with chronic lung diseases (CLD). As we know, right heart failure is very severe complications of CLD, which contributes significantly to morbidity and mortality. However, there is very little literature describing factors associated with right ventricle (RV) dysfunction among patients with chronic hypersensitivity pneumonitis (HP). The purpose of this study was to investigate factors associated with the RV systolic dysfunction among patients with chronic HP.

**Methodology and Theoretical Orientation:** We identified 86 patients with chronic HP, who underwent echocardiography, spirometry, plethysmography, diffusing capacity of carbon monoxide (DLCO), bronchoscopy and lung biopsy. Pulmonary high-resolution computed tomography (HRCT) was assessed by Kazerooni scale (ground glass and lung fibrosis). Aortic pulse wave velocity (PWV) and body mass index also were evaluated as well. RV systolic function was assessed among all subjects using different methods (tricuspid annular plane systolic excursion (TAPSE), RV myocardial performance index (MPI) and RV systolic excursion velocity by tissue Doppler (S')).

**Findings:** RV systolic dysfunction was found in 40.7% of subjects by TAPSE and 38.4% by RV MPI and S'. All parameters of RV systolic function correlated with total lung capacity ( $p < 0.01$ ), DLCO, HRCT (lung fibrosis and ground glass ( $p < 0.001$ )), PWV ( $p < 0.001$ ). Multivariate regression analysis showed that the factors associated with RV systolic dysfunction were lung fibrosis ( $p = 0.001$ ), DLCO ( $p = 0.003$ ) and PWV ( $p = 0.008$ ).

**Conclusion and Significance:** Systolic function of the right ventricle is associated with lung fibrosis, diffusion disturbance and arterial stiffness among patients with chronic hypersensitivity pneumonitis.

### **Biography**

Elena Leonova PhD is a researcher of the Department of differential diagnosis of Interstitial lung diseases (Federal Central Tuberculosis Research Institute). After defending her dissertation on clinical and functional characteristics of patients with COPD and atrial fibrillation, she has focused on studying cardiovascular problems among patients with interstitial lung diseases.

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