Evaluation of the relationship between the severity of clinical symptoms and echocardiographic findings in patients with acute pulmonary embolism

Introduction & Objective: Pulmonary embolism is a serious, potentially fatal medical condition caused by partial or complete blockage of the pulmonary arteries or their branches, usually by blood clots as well as air, tissue, and fat. Echocardiography can be used as an easy, inexpensive, complication-free and, in most cases, universally available tool for risk stratification of patients with acute pulmonary embolism. The aim of this study was to determine the clinical symptoms and echocardiographic findings and investigate their relationship with the severity of embolism in acute pulmonary embolism patients.

Methods & Materials: In this study, all patients diagnosed with pulmonary embolism admitted to Ghaem Hospital in the period of one year between 2021-2022 until reaching the sample size of 40 people were included in the study. Then, clinical symptoms and echocardiographic markers were checked and recorded when the patients entered the study. Pulmonary embolism severity index was used to check the severity of embolism. Data were analyzed in spss version 24 at a significance level of 0.05 using Chi-square test and t-test.

Results: Out of a total of 40 patients, 55% were men. 50% of patients were over 59 years old. According to the embolism severity index, 80% of the patients were in the high risk group. The most common clinical symptoms were dyspnea (97.5%) followed by pleuritic chest pain (75%). RV size enlargement and its dysfunction were recorded in 57.5% of patients. The average age of patients in the high risk group was significantly (p-value: 0.001) higher than the low risk group. There was a significant correlation between MID RV and pulmonary artery pressure with the severity of embolism, so that MID RV and PAP in the High risk group were significantly higher (p-value: 0.000) than in the Low risk group. Also, the severity of pulmonary embolism was significantly related to RV size and function (p-value<0.05).

Conclusion: According to the results of the present study, there was no significant difference in clinical symptoms in different levels of pulmonary embolism, while echocardiographic markers including RV size and function, MID RV and pulmonary artery pressure were significantly different in different levels of pulmonary embolism.

Keywords: Acute pulmonary embolism, echocardiography, clinical symptoms