Correlation between thromboembolic score and anteroposterior diameter of left atrium and left ventricle ejection fraction in patients with atrial fibrillation

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OBJECTIVES: It is considered that atrial fibrillation (AF) is present among 0.4% of adult population. CHA₂DS₂-VASc score is used for stratification of thromboembolic risk. Systolic heart failure has significant thrombogenic potential in atrial fibrillation.¹ Data from the literature on causal relationship between enlarged left atrium and thromboembolic risk in patients with AF are controversial.

PATIENTS AND METHODS: The study analyzed 90 patients with atrial fibrillation. Exclusion criterion was AF in sepsis, acute myocarditis and pericarditis, in acute myocardial infarction, and postoperative AF. Methods used were standard 12-lead ECG, transthoracic echocardiogram and laboratory tests. The first group included 12 (13.3%) patients with valvular AF, while the second group included 78 (86.7%) patients with non-valvular AF.

RESULTS: Anteroposterior diameter of the left atrium was 55.6±11.5 mm vs. 46.3±6.2 mm in the second group; p<0.001. Ejection fraction (EF, %) was 37.1±10.1% in the first group vs. 43.0±11.6% in the second group; p=0.102. CHA₂DS₂-VASc score was 4.0 (1.0-6.0) in the first group vs. 3.0 (0.0-7.0) in the second group; p=0.132. The correlation between CHA₂DS₂-VASc score and anteroposterior diameter of the left atrium among all patients (n=90) was not statistically significant (r=1.0; p=0.346). Significant negative correlation was found between CHA₂DS₂-VASc score and EF among all patients (r=-0.420; p<0.001).

CONCLUSIONS: In our study, the anteroposterior diameter of left atrium was not a determining factor of thromboembolic risk. However, with increase of CHA₂DS₂-VASc score, there was a reduction of EF which favors AF and increase in thromboembolic risk.

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LITERATURE

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