

Transesophageal Echocardiographic Correlates of CHA₂DS₂-VASC Score in Atrial Fibrillation

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Background: The risk of systemic embolism in patients (pts) with atrial fibrillation (AF) can be assessed using the CHA₂DS₂-VASC score, which is based on clinical parameters. We examined whether this score correlates with transesophageal echocardiography (TEE) findings of high embolic risk.

Methods: During a 30 months period, 2400 TEE examinations were performed at our institution. The TEE database was searched to identify all pts fulfilling the following criteria:

- 1) presence of AF during TEE;
- 2) hospitalization during the index TEE, allowing collection of clinical data;
- 3) absence of valve prosthesis or rheumatic mitral valve disease ("non-valvular" AF). The hospital records and TEE examinations were reviewed, the relevant clinical and TEE data were collected, and the CHA₂DS₂-VASC score was calculated.

Results: During the study period 209 pts fulfilled the inclusion criteria (age: 66±11 yrs, 62% men). CHA₂DS₂-VASC score was low (0-1; <2% predicted annual stroke rate) in 39 pts (18.7%), intermediate (2-4; 2-5% stroke rate) in 117 pts (56.0%), and high (5-9; >5% stroke rate) in 53 pts (25.4%). Age (P<0.001) and the proportion of women (P<0.001) increased with higher scores. The distribution of TEE findings in the 3 groups is shown in the Table. Higher scores were associated with a greater frequency of significant (moderate-severe) left atrial (LA) dilatation, severe LA spontaneous echocardiographic contrast (SEC) and complex aortic atheromas (AA), whereas the frequency of LA thrombus and left ventricular systolic dysfunction was similar in the 3 groups.

Conclusions: A higher CHA₂DS₂-VASC score is associated with a higher frequency of both LA (severe SEC) and aortic (complex AA) sources of embolism, suggesting that the increased risk of stroke in pts with higher CHA₂DS₂-VASC scores is related to both cardiac and vascular sources of embolism. The frequency of LA thrombus was unrelated to the score, probably due to the confounding effect of anti-coagulation therapy.