Predictors of Spontaneous Echocardiography Contrast in Atrial Fibrillation Patients

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Introduction: Previous studies have demonstrated that spontaneous echocardiographic contrast (SEC) is associated with a risk for left atrial thrombus (LAT) formation in transesophageal echocardiography (TEE). However, it remains unclear whether transesophageal echocardiography (TEE) is necessary in patients with low CHADS2 score or young age. We investigated predictors of SEC in atrial fibrillation (AF) patients before catheter ablation.

Methods: This study was conducted using a retrospective, single-center observational design. We examined 300 consecutive patients (average age 63±10 years; non-paroxysmal AF 58.3%; periprocedural oral anticoagulation 100%) who were planned to receive CA for AF and underwent preprocedural transesophageal echocardiography (TEE).

Result: We detected SEC in 74/300 patients (24.7%) and 3 of them also had LAT (1.0%). Patients with SEC had a higher proportion of non-paroxysmal AF (85.1% vs. 49.6%, P<0.0001), CHADS2 score≥2 (48.0% vs. 27.8%, P=0.0014), BNP≥120 (66.2% vs. 34.5%, P<0.0001), higher BMI (25.1 ± 5.2 vs. 24.0 ± 3.5, P=0.044), and larger left atrium diameter (43.0[38.0, 46.7] vs. 39.0[35.8, 43.0], P<0.0001) more frequently compared with those without SEC. Multivariate analysis including these predictors indicated that non-paroxysmal AF (P<0.0001, Odds ratio ; 4.92, 95% confidence interval ; 2.28-10.7), CHADS2 score≥2 (0.020; 2.12; 1.13-4.01) and BNP≥120 (0.048; 1.95; 1.00-3.79) were independently associated with SEC.

Conclusion: Non-paroxysmal AF, CHADS2 score≥2, high level of BNP are predictors of SEC in AF patients before CA.