Predicting thrombus outcome during anticoagulation for left ventricular thrombus

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Funding Acknowledgements: None.

Background: Up to 22% of embolizations have been linked to left ventricular (LV) thrombosis. Oral anticoagulation (OAC) for at least 3 months is recommended for patients with LV thrombus, according to guidelines. The purpose of this study was to predict the resolution of thrombus in patients with LV thrombus who were taking OAC for 3 months.

Methods: We enrolled patients prospectively from 2020 to 2022 and retrospectively from 2013 to 2019 at a national center of cardiovascular diseases in China. Patients with a history of LV thrombus < 3 months were included. Eligible patients were administered OAC and scheduled for 3 months of follow-up visits. The primary efficacy outcome was the rate of thrombus resolution at 3 months. Safety outcomes and major cardiovascular adverse events were collected. The hazard ratio (HR) and 95% confidence intervals (CIs) were estimated with adjustment for covariates using Cox regression models.

Results: We identified a total of 380 eligible patients. The median age was 53 (41, 63) years and 310 (81.6%) patients were male. The main underlying etiologies were dilated cardiomyopathy (51.6%). 204 (53.7%) patients received non-vitamin K antagonist oral anticoagulants (NOACs) while the rest were on warfarin within 3 months. In multivariable analysis, patients with NOACs had a higher likelihood of thrombus resolution than those taking warfarin (HR 1.39, 95% CI 1.08 – 1.79, P = 0.011). Lower LV ejection fraction levels and smaller diameter or thickness of thrombi were also the dominant predictors of thrombus resolution followed by a faster heart rate, a higher white blood cell count, therapy of diuretics, beta-blocker, and parental anticoagulation during hospitalization (eight variables, all P < 0.05). At 3 months, 29 patients (7.6%) suffered major cardiovascular adverse events, including 26 emboli and 3 deaths. One patient (0.3%) experienced an ISTH major bleeding.

Conclusions: Patients with systemic anticoagulation and positive treatment for heart failure achieved a greater rate of thrombus resolution at 3 months. The option of oral anticoagulation might be favorable NOACs, and further randomized controlled studies are warranted to explore.
Forest plot of multivariable analysis.