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# Response to DOAC Treatment in A Patient with Biventricular Thrombus Secondary to Heart Failure with Reduced LVEF of Ischemic Etiology

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**ABSTRACT:** Current evidence regarding the use of direct oral anticoagulants (DOACs) in the presence of left ventricular thrombus is primarily derived from observational studies with positive results in different meta-analyses that suggest a possible role for treatment.

We present the case of a 54-year-old female with a history of arterial hypertension and diabetes mellitus recently diagnosed, who came for medical evaluation due to deterioration of functional class. Electrocardiogram in sinus rhythm with anterior bundle branch block.

**KEYWORDS:** doac, biventricular thrombus, heart failure

## INITIAL WORK UP

We decided to perform an echocardiogram with findings of severely reduced left ventricular systolic function (21%) with segmental motion disorders, with an image suggestive of an apical thrombus measuring 17 x 15 mm. Grade II diastolic dysfunction. Normal-sized right ventricle with systolic dysfunction, with an image suggestive of an apical thrombus measuring 18 x 12 mm with an intermediate probability of pulmonary hypertension. Diagnostic coronary angiography showed a 40% proximal main lesion. Left anterior descending artery with chronic total occlusion from the middle segment, J-CTO Score 2 pts. Circumflex vessel smaller than 2 mm with chronic total occlusion from the proximal segment, J-CTO Score 3 points. Right coronary artery, dominant vessel with chronic total occlusion from the proximal segment, J-CTO 3 points. A perfusion study with Thallium-201 was performed, reporting no evidence of viable tissue.

## DIAGNOSIS AND MANAGEMENT

Recent studies report a prevalence of LVT ranging from 2 to 15%. Several retrospective studies investigated the role of DOACs in LVT with promising outcomes. In a systematic search and meta-analysis of observational and randomized data comparing DOACs vs VKA in patients with LVT the use of DOACs was not associated with a significant difference in stroke or systemic embolism compared with VKA therapy but it was associated with a lower rate of all cause death and fewer bleeding events. In No LVT Trial a prospective, open label, multicenter, randomized clinical trial compared 1:1 ratio dose adjusted warfarin vs rivaroxaban 20 mg daily. LVT was assessed by transthoracic echocardiography at 1, 3 and 6 months with a primary outcome of resolution and secondary efficacy outcomes of stroke, systemic embolism and a composite of both. Complete resolution occurred in 71.7%, 76.9% and 87.1% in the rivaroxaban group and 47,5%, 67.5%, 80% in the warfarin group at 1, 3 and 6 months. No systemic embolic events occurred in the rivaroxaban group, whereas 2 events occurred in the warfarin group. Major bleeding occurred in 5.1% in rivaroxaban group and 15% in the warfarin group. Their results demonstrated that rivaroxaban was non inferior and had faster thrombus resolution in comparison to warfarin. Optimal medical treatment was initiated, as well as therapy based on direct anticoagulant rivaroxaban 20 mg and antiplatelet therapy with clopidogrel 75 mg.

## FOLLOW UP

An echocardiogram was performed 2 months after starting treatment, observing resolution of the apical thrombus in the left ventricle with reduction of thrombus in right ventricle. Cardiac rehabilitation program begins with improvement in functional class NYHA I.

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## CONCLUSION

Treatment with DOACs may represent a favorable therapeutic due to a better safety profile, lower hospital costs and better patient quality of life. The optimal duration of treatment with oral anticoagulants remains unclear; however, most literature recommends at least 3 to 6 months of follow-up. Most recommendations are based on retrospective analyses. Emphasis should be placed on conducting clinical trials to provide a precise recommendation for use.

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