Contemporary incidence of mural thrombus following acute anterior STEMI complicated by new antero/apical wall motion abnormalities: insights from the multicenter MAGIC retrospective registry

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TITLE

Contemporary incidence of mural thrombus following acute anterior STEMI complicated by new antero/apical wall motion abnormalities: insights from the multicenter MAGIC retrospective registry

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PURPOSE

Current guidelines suggest that the addition of oral anticoagulation (OAC) following anterior STEMI with antero-apical wall motion abnormalities (WMA) may be considered for the prevention of left ventricular thrombus (LVT) formation and its potential subsequent cerebral or systemic embolism. However, the incidence of mural LVT in the current era of timely primary percutaneous coronary intervention (pPCI) and potent dual antiplatelet therapy (DAPT) has not been well described, and needs to be reassessed in order to support this practice. The purpose of this analysis was to define the incidence of LVT in a pPCI population with anterior STEMI and antero-apical WMA.

METHOD

The MAGIC study is a retrospective multicenter registry involving 5 academic centers with pPCI facilities in the province of Quebec, designed to improve the care of patients with antero/apical WMA.
following STEMI. Consecutive patients with an acute anterior STEMI treated with pPCI and presenting new anterior WMA from 2010-2015 were eligible for inclusion. All clinical data, including outcomes, were retrospectively abstracted from medical charts. In this substudy, the incidence of LVT in-hospital and at 12 months is reported according these pre-specified criteria: LV ejection fraction (LVEF) < 30% versus >30%; apical involvement vs. no apical involvement.

RESULTS AND CONCLUSIONS

Among the 367 patients included in this analysis, 18 (5%) presented LVT on baseline echocardiography following pPCI. Pre-procedure and intra-procedural antithrombotic therapy was similar between patients and without LVT (p=NS for all). Patients with LVT had a higher incidence of cardiogenic shock (22% vs. 8%, p=0.03) and lower LVEF (median [IQR]: 26% [20-41%] vs. 40% [35-45%]; p=0.001).

Among the 223 patients without LVT at baseline with 12-months follow-up, only 1 (0.4%) developed LVT during follow-up, representing 0.6% of all patients discharged on DAPT only without anticoagulation. It was diagnosed 214 days following the index event. Among the 68 patients for whom all four apical segments were akinetic (51% discharged on DAPT only), and the 39 with an LVEF < 30% (42% discharged on DAPT only), none developed an LVT.

In conclusion, in the current era of early mechanical reperfusion with the availability of novel P2Y12-inhibitors, the acute incidence of LVT following anterior STEMI with antero-apical WMA remains clinically significant. The incidence of LVT during follow-up appears low, but may be underestimated by the retrospective analysis based on chart review. A prospective study that includes mandated contrast-enhanced echocardiography at baseline and follow-up in this patient population is warranted.