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Is Elective Electrical Cardioversion equally safe with or without Transesophageal Echocardiography: A Real-World Observational Study

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KEYWORDS: atrial fibrillation, electrical cardioversion, transesophageal echocardiography, thromboembolism.

CITATION: Cardiol Croat. 2026;21(11-12):237-8. | https://doi.org/10.15836/ccar2026.237

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Introduction: Rhythm control strategy in patients with atrial fibrillation (AF) or atrial flutter (AFL) using elective electrical cardioversion (eECV) is considered safe and with low thromboembolic risk when adequate anticoagulation is provided.[1] Nevertheless, the role of routine transesophageal echocardiography (TEE) prior to eECV remains controversial. This real - world observational study was conducted to evaluate thromboembolic outcomes in patients undergoing eECV with or without TEE guidance in a everyday clinical setting.[2-4]

Patients and Methods: We conducted a hybrid retrospective–prospective observational study that included 420 of AF or AFL patients scheduled for eECV. Prior to procedure all of the patients were taking anticoagulation drugs for at least 3 weeks as recommended in current guidelines[1]. All of the patients in prospective cohort (n = 200) underwent TEE prior to eECV while patients in retrospective cohort (n = 220) underwent eECV without routine TEE. The occurrence of TEs (ischemic stroke or systemic embolism) within 30 days after eECV was observed.

Results: In both patients cohort TEs were rare. No events were observed in the prospective cohort - 0/164 and only 3/220 (1,36%) patients in the retrospective cohort experienced a TE (RR 5.22, 95% CI 0.27 – 100.41, p value 0.264) (**Table 1**). TEE identified left atrial appendage (LAA) thrombus in 28/200 (14%) patients and 8/200 (4%) patients had TEE suspicion of thrombus that had to be clarified with computed tomography of the heart. Those patients were subsequently excluded from eECV (**Figure 1**).

TABLE 1. Primary outcomes: Thromboembolic events within 30 days.

Variable	Total (N = 384)	Retrospective (N = 220)	Prospective (N = 164)	p value
Thromboembolic events				0.264
Yes	3	3	0	
No	381	217	164	

RECEIVED:
October 2, 2026
UPDATED:
November 4, 2026

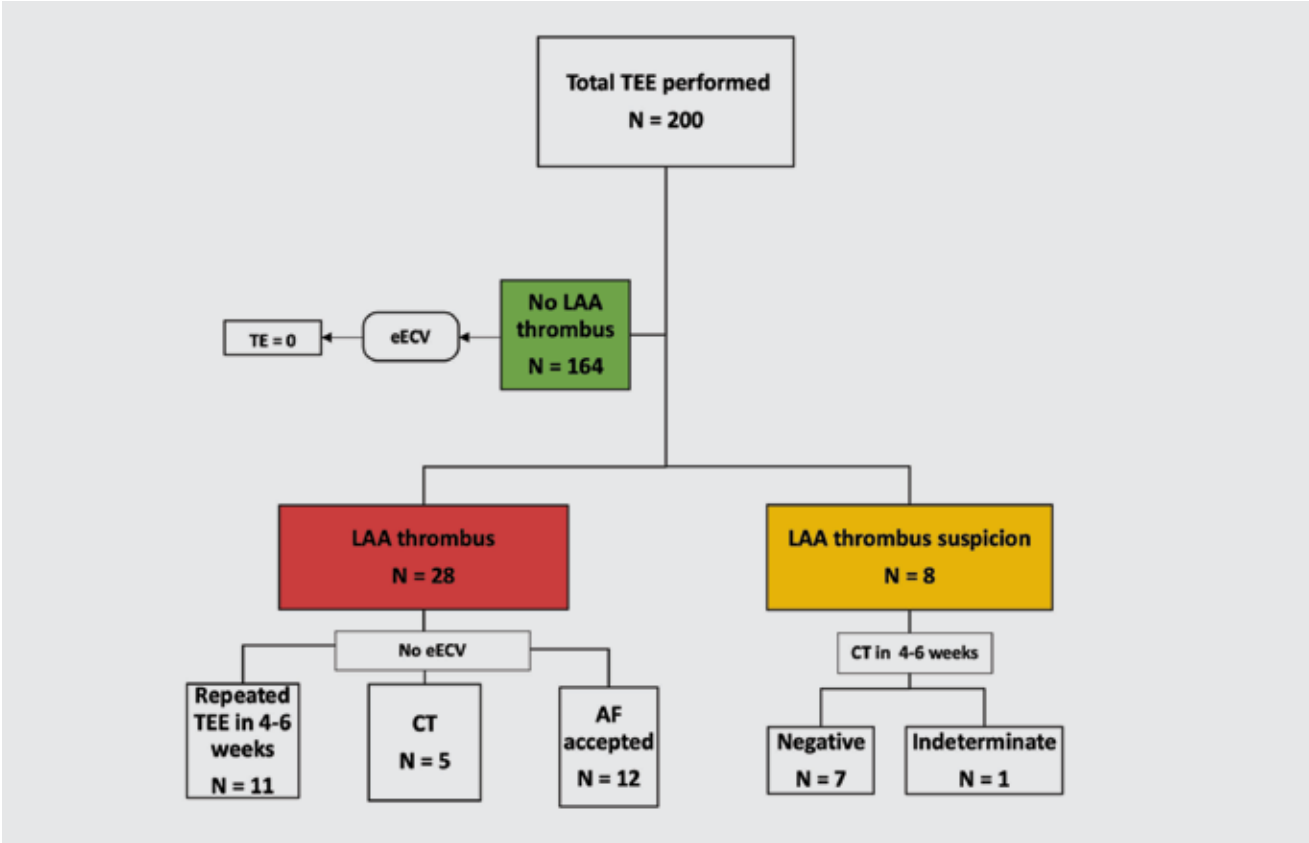


FIGURE 1. Flowchart of transesophageal echocardiography findings in the prospective cohort and subsequent management.

AF, atrial fibrillation; CT, computed tomography; eECV, elective electrocardioversion; LAA, left atrial appendage; TE, thromboembolic event; TEE, transesophageal echocardiography

Conclusion: Thromboembolic complications after eECV were infrequent within this real-world cohort under adequate anticoagulation. While direct strategic comparisons are limited by the study design, the data demonstrate that a standard anticoagulation pathway without routine TEE is associated with low thromboembolic risk in most cases. However, the detection of LAA thrombus in certain patients underscores the necessity of personalized risk assessment, supporting a selective approach to TEE in high-risk settings.

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