

Letters

TO THE EDITOR

Transesophageal Echocardiography Before Elective Direct Current Cardioversion in Cardiac Amyloidosis

Too Soon to Discard It?

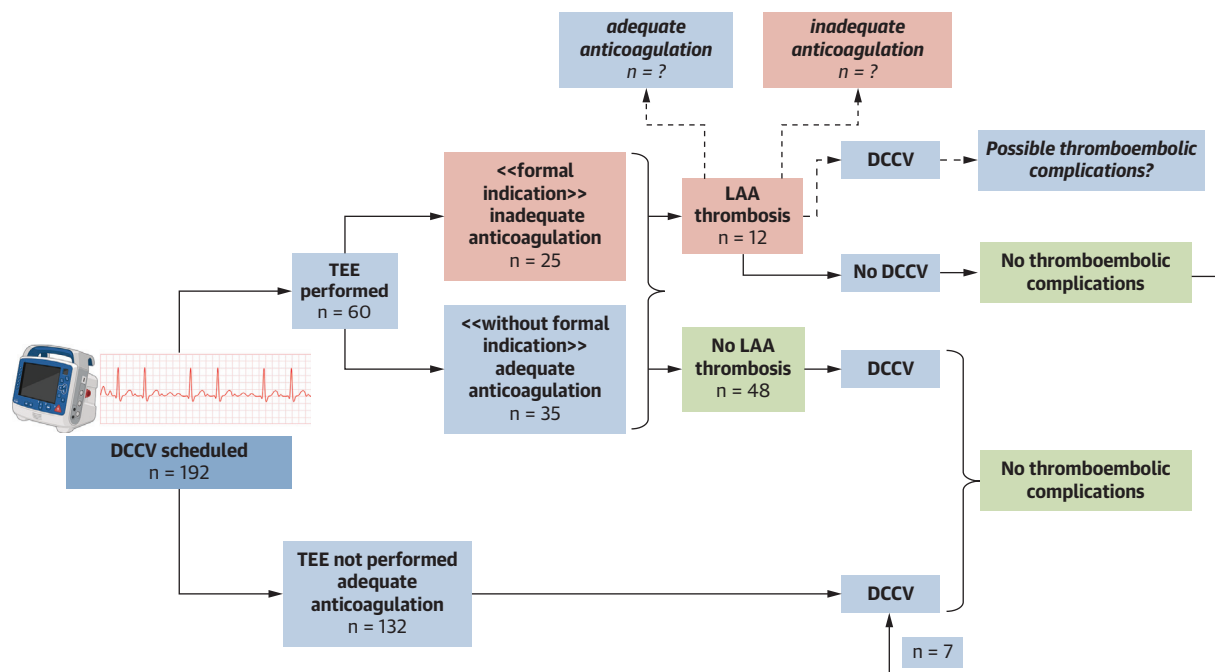
We have read with interest the retrospective analysis of all scheduled direct current cardioversion (DCCV) procedures in patients with cardiac amyloidosis (CA) over 10 years.¹ This study challenges the existing recommendation that all patients with CA should



undergo a transesophageal echocardiogram (TEE) before elective DCCV procedure, regardless of whether they have received adequate anticoagulation.² The recommendation was originally based on findings of a high incidence of left atrial appendage (LAA) thrombosis in patients with CA, and a significant rate of elective DCCV procedure cancellations owing to LAA thrombosis,³ as well as the known mechanisms promoting thrombus formation (such as atrial dilation, dysfunction, and infiltration of the atrial wall by amyloid fibrils).⁴

In the study by Dr Ben Zadok and colleagues, TEE was performed at the clinician's discretion, following an institutional policy that adheres to "standard guidelines for pre-DCCV TEE," which require TEE when patients have not received adequate anticoagulation therapy before DCCV.¹ TEE was

FIGURE 1 Management of Patients With Cardiac Amyloidosis Referred to Elective DCCV



DCCV = direct current cardioversion; LAA = left atrial appendage; TEE = transesophageal echocardiogram.

performed in 60 cases, of which 35 were conducted “without documented formal indication,” likely indicating that these patients had received adequate anticoagulation. LAA thrombosis was detected in 12 of these 60 cases, leading to the deferral of DCCV. In the remaining cases, DCCV was performed without any recorded thromboembolic complications¹ (Figure 1).

Importantly, the study does not provide the number of patients with LAA thrombosis who had received adequate anticoagulation. If some adequately anticoagulated patients did indeed have LAA thrombosis, the authors’ conclusion that TEE is unnecessary in adequately anticoagulated patients before DCCV could imply that some patients with LAA thrombosis might undergo DCCV, potentially exposing them to the risk of thromboembolic events. Although it is plausible that “fresh thrombus formation/propagation associated with post-DCCV atrial stunning in inadequately anticoagulated patients” is the primary mechanism of systemic thromboembolism after DCCV in CA,¹ LAA thrombosis remains a well-established risk factor. Exposing patients who might have a LAA thrombus to such risks, particularly for an elective DCCV procedure, does not seem to be appropriate.

For these reasons, the more cautious approach of performing TEE, even in adequately anticoagulated patients seems to be preferable,² at least until data from larger cohorts, ideally from prospectively designed studies, can provide better insight into the frequency of LAA thrombosis in adequately anticoagulated patients with CA.

*Alberto Aimo, MD, PhD^{a,b}

Giuseppe Vergaro, MD, PhD^{a,b}

Giorgia Panichella, MD^c

Vincenzo Castiglione, MD, PhD^{a,b}

Michele Emdin, MD, PhD^{a,b}

*Interdisciplinary Center for Health Sciences

Scuola Superiore Sant’Anna, and Cardiology Division

Fondazione Toscana Gabriele Monasterio

Piazza Martiri della Libertà 33

56124 Pisa, Italy

E-mail: a.aimo@santannapisa.it OR aimoalb@ftgm.it

From the ^aHealth Sciences Interdisciplinary Center, Scuola Superiore Sant’Anna, Pisa, Italy; ^bFondazione

Toscana Gabriele Monasterio, Pisa, Italy; and the

^cCareggi University Hospital, Florence, Italy.

The authors have reported that they have no relationships relevant to the contents of this paper to disclose.

The authors attest they are in compliance with human studies committees and animal welfare regulations of the authors’ institutions and Food and Drug Administration guidelines, including patient consent where appropriate. For more information, visit the [Author Center](#).

REFERENCES

1. Itzhaki Ben Zadok O, Cuddy SAM, Gaggin HK, et al. Safety of direct current cardioversion without routine transesophageal echocardiography in patients with cardiac amyloidosis. *J Am Coll Cardiol*. 2024;84:675-677.
2. Kittleson MM, Ruberg FL, Ambardekar AV, et al. 2023 ACC expert consensus decision pathway on comprehensive multidisciplinary care for the patient with cardiac amyloidosis: a report of the American College of Cardiology Solution Set Oversight Committee. *J Am Coll Cardiol*. 2023;81:1076-1126.
3. El-Am EA, Dispenzieri A, Melduni RM, et al. Direct current cardioversion of atrial arrhythmias in adults with cardiac amyloidosis. *J Am Coll Cardiol*. 2019;73:589-597.
4. Vergaro G, Aimo A, Rapezzi C, et al. Atrial amyloidosis: mechanisms and clinical manifestations. *Eur J Heart Fail*. 2022;24:2019-2028.