Prevalencija tromba u lijevom atriju verificiranih transezofagusnom ehokardiografijom prije elektivne elektrokardioverzije fibrilacije atrija

Prevalence of left atrial thrombus verified by transesophageal echocardiography before elective direct current cardioversion of atrial fibrillation

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Uvod: Elektrokardioverzija je učinkovita metoda za prevođenje fibrilacije atrija (FA) u sinusni ritam. Trenutne smjernice Europskog kardiološkog društva[1] preporučuju učiniti transezofagusnu ehokardiografiju (TEE) svim bolesnicima koji idu na elektrokardioverziju kako bi se isključilo postojanje tromba u aurikuli lijevog atrija (LAT), osim ukoliko su adekvatno antikoagulirani posljednja 3 tjedna ili FA traje kraće od 48 sati. Cilj studije je odrediti prevalenciju LAT u bolesnika predviđenih za elektivnu elektrokardioverziju i usporediti prevalencije LAT između skupina bolesnika s različitim tromboembolijskim rizicima.

Pacijenti i metode: U studiju su uključeni svi bolesnici pregledani u Hitnoj službi ili Zavodu za bolesti srca i krvnih žila Kliničkog bolničkog centra Sestre milosrdnice u razdoblju od siječnja 2013. do svibnja 2016. godine s FA trajanja dužeg od 48 sati kojima je učinjena elektrokardioverzija. U studiju nisu uključeni bolesnici s trajanjem FA kraćim od 48 sati. Svim bolesnicima učinjen je TEE, bez obzira na status antikoagulacije. Tromboembolijski rizik je izračunat za svakog bolesnika korištenjem CHA2DS2-VASc zbroja.

Rezultati: Ukupno je uključeno 139 bolesnika (106/139; 76% su bili muškarci) s medijanom dobi od 66 godina (59-72). Ukupna prevalencija tromba u lijevom atriju (LA) je 30/139 (21,6%). 49 bolesnika je bilo adekvatno antikoagulirano barem tri tjedna prije TEE (35,2%), dok je 90 bolesnika bilo neadekvatno antikoagulirano (64,8%). 12 bolesnika s pronađenim trombom (8,6%) je bilo adekvatno antikoagulirano varfarinom (N=11) ili novim oralnim antikoagulansima (N=1), od ukupno 49 adekvatno antikoaguliranih bolesnika (12/49; 24,5%). 18 bolesnika s pronađenim trombom bilo je neadekvatno antikoagulirano (20%) **(tablica 1)**. Nije bilo statistički značajne razlike u prevalenciji tromba LA između skupina adekvatno i neadekvatno antikoaguliranih bolesnika (12 od 49; 24,5% naspram 18 od 90, 20%, p=0,582).

Background: Direct current (DC) cardioversion is an effective method for converting atrial fibrillation (AF) to sinus rhythm. Current ESC Guidelines[1] suggest that transoesophageal echocardiography (TOE) should be performed to rule out atrial thrombi in patients undergoing DC cardioversion, unless adequate anticoagulation has been documented for 3 weeks or AF is <48 hours from a definite onset. The aim of this study was to determine the prevalence of left atrial (LA) thrombus in patients undergoing elective DC cardioversion in our center and to compare LA thrombus prevalence between the patients with different thromboembolic risks.

Patients and Methods: All patients with AF lasting >48 hours admitted to the Emergency department or Department of Cardiology at the University Hospital Centre "Sestre milosrdnice" Zagreb from January 2013 to May 2016 who underwent DC cardioversion were included in the study. Patients with AF lasting <48 hours were excluded from the study. All patients underwent preprocedural TOE to exclude LA thrombus regardless on anticoagulation status. The thromboembolic risk status was calculated for each patient using a CHA2DS2-VASc score. DC cardioversion was performed according to local protocols.

Results: Total of 139 patients were included (106/139; 76% were male) with median age of 66 years (59-72). The overall prevalence of LA thrombi was 30/139 (21.6%). 49 patients were adequately anticoagulated for at least 3 weeks prior to the peri-procedural TOE (35.2%), whereas 90 patients were inadequately anticoagulated (64.8%). 12 patients with a detected thrombus were adequately anticoagulated with warfarin (N=11) or new oral anticoagulants (N=1) out of totally 49 adequately anticoagulated patients (12/49; 24.5%). 18 patients with a detected thrombus were inadequately anticoagulated (20%) (**Table 1**.) There was no statistical significance between

Zaključak: Prevalencija tromba u LA je visoka, čak i u bolesnika koji su bili adekvatno antikoagulirani. Potrebne su daljnje studije s većim brojem bolesnika kako bi se odredilo je li potrebno svim bolesnicima učiniti TEE prije elektivne elektrokardioverzije.

prevalence of LA thrombi between adequately vs. inadequately anticoagulated patients (12 out of 49; 24.5% vs 18 out of 90, 20%, p=0.582)

Conclusion: The prevalence of LA thrombi is high, even in patients who have been adequately anticoagulated. Further research with larger number of patients is needed to determine whether all patients should undergo TEE before elective DC cardioversion.

TABLE 1. Number of patients with left atrial thrombus in patients with low thromboembolic risk (CHA2DS2VASc score 0-1) and with high risk (CHA2DS2VASc score 2).

CHA2DS2-VASc	TOTAL PATIENTS	TOTAL THROMBI (n)
0-1	45	6
2-6	94	24

LITERATURE

1. European Heart Rhythm Association; European Association for Cardio-Thoracic Surgery, Camm AJ, Kirchhof P, Lip GY, Schotten U, Savelieva I, Ernst S, et al. Guidelines for the management of atrial fibrillation: the Task Force for the Management of Atrial Fibrillation of the European Society of Cardiology (ESC). Eur Heart J. 2010;31(19):2369-429.
DOI: http://dx.doi.org/10.1093/eurheartj/ehq278