

Incidencija i rizični čimbenici za nastanak tromba u aurikuli lijeve pretkljetke u bolesnika s fibrilacijom atrijske u kojih je planirano liječenje sinkronom elektrokardioverzijom – dvogodišnje iskustvo jednog centra

Incidence and risk factors for left atrial appendage thrombus formation in patients with atrial arrhythmias scheduled for cardioversion – biannual single center experience

Mario Stipinović*,
Sofiya Andreykanich,
Helena Jerkić,
Bojana Aćamović
Stipinović,
Darko Počanić,
Stjepan Kranjčević,
Damir Kozmar,
Darko Vujanić,
Maro Dragičević,
Ivica Premužić
Meštrović,
Tomislav Letilović

Klinička bolnica Merkur,
Zagreb, Hrvatska
Clinical Hospital Merkur,
Zagreb, Croatia

RECEIVED:
September 25, 2016

ACCEPTED:
October 10, 2016



KLJUČNE RIJEČI: fibrilacija atrijske, tromb, aurikula lijeve pretkljetke.

KEYWORDS: atrial fibrillation, thrombus, left atrial appendage.

CITATION: *Cardiol Croat.* 2016;11(10-11):433. | DOI: <http://dx.doi.org/10.15836/ccar2016.433>

***ADDRESS FOR CORRESPONDENCE:** Mario Stipinović, Klinička bolnica Merkur, Zajčeva 19, HR-10000 Zagreb, Croatia. / Phone: +385-98-1964-133 / E-mail: mario.stipinovic@yahoo.com

ORCID: Mario Stipinović, <http://orcid.org/0000-0002-1582-1552> · Sofiya Andreykanich, <http://orcid.org/0000-0002-9334-6371>
Helena Jerkić, <http://orcid.org/0000-0002-1650-4735> · Darko Počanić, <http://orcid.org/0000-0003-3257-110X>
Stjepan Kranjčević, <http://orcid.org/0000-0002-1575-1902> · Damir Kozmar, <http://orcid.org/0000-0001-7626-3534>
Darko Vujanić, <http://orcid.org/0000-0003-0585-5887> · Maro Dragičević, <http://orcid.org/0000-0002-2620-3194>
Ivica Premužić Meštrović, <http://orcid.org/0000-0002-2592-8302> · Tomislav Letilović, <http://orcid.org/0000-0003-1229-7983>

Uvod: Incidencija fibrilacije atrijske (FA) je u stalnom porastu te ona danas predstavlja najčešću aritmiju u kliničkoj praksi¹. Prevencija tromboembolijskih komplikacija je primarni cilj u terapiji iste². Svrha ovog istraživanja je prikazati učestalost i rizične čimbenike za nastanak tromba u aurikuli lijevog atrijske (LAA), dijagnosticirane uporabom transezofagealne ehokardiografije (TEE) u bolesnika u kojih je planirano liječenje sinkronom elektrokardioverzijom.

Pacijenti i metode: U istraživanje su uključeni svi bolesnici koji su bili hospitalizirani u Zavodu za kardiologiju, Kliničke bolnice Merkur, tijekom 2014. i 2015. godine, zbog atrijske aritmije, a planirano je bilo liječenje sinkronom elektrokardioverzijom. Obuhvaćeni su bolesnici primali različitu antikoagulantnu/antiagregacijsku terapiju prema najnovijim smjernicama. Prije izvođenja sinkrone elektrokardioverzije, svakom je ispitaniku učinjena TEE. Analizirali smo različite pojedinačne poznate rizične čimbenike, kao i one za koje se pretpostavlja da povećavaju rizik nastanka tromba u LAA, kao što su: dob, spol, vrsta antikoagulantne terapije, duljina primjena terapije, sistolička funkcija srca i vrsta atrijske aritmije, a također smo analizirali i utjecaj koegzistencije različitih rizičnih čimbenika, prikazane kroz "CHA2DS2-VASc score" ≥ 2 , na nastanak tromba u LAA.

Rezultati: U istraživanje je uključeno 65 ispitanika (srednja dob $65,5 \pm 11,7$, srednji CHA2DS2-VASc 2, 40% žene, 60% muškarci). U 14 ispitanika (21,5%) unatoč antikoagulantnoj terapiji otkriven je tromb u LAA. Nismo pronašli statistički značajnu povezanost između ispitivanih pojedinačnih rizičnih čimbenika i nastanka tromba u LAA, no s druge pak strane statistička je analiza pokazala povezanost između nastanka tromba u LAA i "CHA2DS2-VASc score" jednakog ili većeg od 2 ($p=0,017$). U svih 14 ispitanika s prisutnim trombom u LAA (100%) "CHA2DS2-VASc score" bio je veći od 2.

Zaključak: Unatoč antikoagulantnoj terapiji u bolesnika s atrijskim aritmijama postoji značajan rizik od nastanka tromba u LAA. Stvaranje tromba u LAA povezano je s koegzistencijom različitih rizičnih čimbenika, prije nego s jednim rizičnim čimbenikom.

Introduction: The incidence of atrial fibrillation is increasing and it is now the most common arrhythmia in clinical practice¹. Primary therapeutic goal in patients with atrial fibrillation is to prevent thromboembolic complications². The aim of this study was to determine the incidence as well as risk factors for left atrial appendage (LAA) thrombus formation, detected with transesophageal echocardiography (TEE), in patients with atrial arrhythmias and planned cardioversion.

Patients and Methods: Patients with atrial arrhythmias, scheduled for synchronized cardioversion at the Department of Cardiology, Clinical Hospital Merkur in years 2014 and 2015 were studied. All patients were treated with different anticoagulation/antiaggregation protocols according to the most recent guidelines. TEE was done before every procedure. We studied various isolated risk factors known or believed to be associated with development of left atrial appendage thrombus, such as: age, sex, type of anticoagulation therapy, duration of therapy, systolic heart function and type of atrial arrhythmia. We also studied influence of coexistence of various risk factors, expressed as CHA2DS2-VASc score ≥ 2 , on LAA thrombus formation.

Results: Data from 65 patients were gathered (mean age 65.5 ± 11.7 , mean CHA2DS2-VASc score 2, 40% female, 60% male). In 14 subjects (21.5%), despite adequate anticoagulation/antiaggregation therapy, the thrombus in LAA was discovered. We found no statistically significant correlation between isolated risk factors, that were studied, and LAA thrombus formation. On the other hand statistical analysis showed correlation of LAA thrombus formation with CHA2DS2-VASc score equal or higher than 2 ($p=0.017$). In fact all 14 patients with thrombus (100%) had a CHA2DS2-VASc of that value.

Conclusion: There is still a significant risk of LAA thrombus in patients with atrial arrhythmias despite adequate anticoagulation therapy. LAA thrombus formation in those patients correlates with coexistence of several rather than one risk factor.

LITERATURE

1. Munger TM, Wu LQ, Shen WK. Atrial fibrillation. *J Biomed Res.* 2014 Jan;28(1):1-17. DOI: <http://dx.doi.org/10.7555/JBR.28.20130191>
2. Crandall MA, Bradley DJ, Packer DL, Asirvatham SJ. Contemporary management of atrial fibrillation: update on anticoagulation and invasive management strategies. *Mayo Clin Proc.* 2009;84(7):643-62. DOI: [http://dx.doi.org/10.1016/S0025-6196\(11\)60754-4](http://dx.doi.org/10.1016/S0025-6196(11)60754-4)