

## Is mitral regurgitation a predictor of left atrial thrombosis in patients with atrial fibrillation?

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**KEYWORDS:** atrial fibrillation, mitral regurgitation, thrombus, transesophageal echocardiography.

**CITATION:** *Cardiol Croat.* 2015;10(9-10):212. | **DOI:** <http://dx.doi.org/10.15836/ccar.2015.212>

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**AIMS:** According to research published so far, severe mitral regurgitation (MR) is associated with reduced prevalence of left atrial thrombosis (LAT) in patients with atrial fibrillation (AF), while moderate MR doesn't seem to affect the rate of thromboembolic complications.<sup>1,2</sup> Our aim was to assess the relationship between the severity of the MR and the prevalence of LAT in patients with AF.

**PATIENTS AND RESULTS:** We conducted a retrospective observational study involving 450 patients with AF who underwent pre-cardioversion transesophageal echocardiography in our department from January 2011 until January 2015. The severity of mitral regurgitation was assessed with Doppler echocardiography and classified as mild, moderate or severe. The existence of spontaneous echo contrast (SEC) or LAT was evaluated. We also analysed the anticoagulation status and thromboembolic risk according to the CHA<sub>2</sub>DS<sub>2</sub>-Vasc score system. Out of 450 patients, 176 had no MR, 182 had mild, 84 moderate and 8 severe MR. There was no statistically significant difference among the groups in their anticoagulation status, median INR was 1.79 (1.2-3) vs. 1.86 (1.27-2.38) vs. 1.9 (1.18-2.5) vs. 2 (1.2-2.2) respectively, p=0.22, while more severe forms of MR were associated with higher CHA<sub>2</sub>DS<sub>2</sub>-Vasc scores p=0.001. There was no statistically significant difference in SEC 27.3% vs. 25.8% vs. 27.4% vs. 0%, p=0.39 or LAT prevalence 10.2% vs. 14.3% vs. 16.7% vs. 12.5%, p=0.486. Multivariate analysis revealed that MR is not a significant predictor of LAT, OR: 1.36, CI: 0.93-1.98.

**CONCLUSION:** Our study shows that mild and moderate MR are not independently associated with LAT, but was underpowered for the analysis of the association between severe MR and LAT. Further research is needed to evaluate the association between severe MR and LAT and its repercussions on thromboembolic risk.

**RECEIVED:**

July 31, 2015

**ACCEPTED:**

September 17, 2015



### LITERATURE

1. Fukuda N, Hirai T, Ohara K, Nakagawa K, Nozawa T, Inoue H. Relation of the severity of mitral regurgitation to thromboembolic risk in patients with atrial fibrillation. *Int J Cardiol.* 2011;146(2):197-201. **DOI:** <http://dx.doi.org/10.1016/j.ijcard.2009.06.051>
2. Breithardt G, Baumgartner H, Berkowitz SD, Hellkamp AS, Piccini JP, Stevens SR, et al.; ROCKET AF Steering Committee & Investigators. Clinical characteristics and outcomes with rivaroxaban vs. warfarin in patients with non-valvular atrial fibrillation but underlying native mitral and aortic valve disease participating in the ROCKET AF trial. *Eur Heart J.* 2014;35(47):3377-85. **DOI:** <http://dx.doi.org/10.1093/eurheartj/ehu305>