

## PEER-REVIEW REPORT

**Name of journal:** World Journal of Cardiology

**Manuscript NO:** 32520

**Title:** Clinical and anatomic predictors of need for repeat atrial fibrillation ablation

**Reviewer's code:** 00259032

**Reviewer's country:** United Kingdom

**Science editor:** Jin-Xin Kong

**Date sent for review:** 2017-01-16

**Date reviewed:** 2017-01-16

CLASSIFICATION	LANGUAGE EVALUATION	SCIENTIFIC MISCONDUCT	CONCLUSION
<input type="checkbox"/> Grade A: Excellent	<input checked="" type="checkbox"/> Grade A: Priority publishing	Google Search:	<input type="checkbox"/> Accept
<input type="checkbox"/> Grade B: Very good	<input type="checkbox"/> Grade B: Minor language polishing	<input type="checkbox"/> The same title	<input type="checkbox"/> High priority for publication
<input checked="" type="checkbox"/> Grade C: Good	<input type="checkbox"/> Grade C: A great deal of language polishing	<input type="checkbox"/> Duplicate publication	<input type="checkbox"/> Rejection
<input type="checkbox"/> Grade D: Fair	<input type="checkbox"/> Grade D: Rejected	<input type="checkbox"/> Plagiarism	<input type="checkbox"/> Minor revision
<input type="checkbox"/> Grade E: Poor		[Y] No	<input type="checkbox"/> Major revision
		BPG Search:	
		<input type="checkbox"/> The same title	
		<input type="checkbox"/> Duplicate publication	
		<input type="checkbox"/> Plagiarism	
		[Y] No	

## COMMENTS TO AUTHORS

Many thanks for asking me to review this observational study that investigated patient and MRI Predictors of the need for repeat atrial fibrillation ablation. The authors found that increased pulmonary vein size was predictive for the need for repeat AF ablation. However this prediction was only statistically significant for the right upper pulmonary vein. However, there was huge heterogeneity in PV diameters such that a cut-off that could be used to be clinically useful to predict increased AF redo ablation could not be identified. They noted that a 1mm millimeter increase in PV diameter was associated with an approximately 5-10% increased risk of requiring repeat procedures Overall the manuscript was well written and was very easy to follow. However, I have a number of additional comments that I would like to make. I feel the title could be far more precise than it is at present. A much better title would be something like 'MRI and Clinical predictors of the need for repeat atrial fibrillation ablation'. The authors cited the previous study by Hauser TH, Essebag V, Baldessin F et al where Larger PV size on MRI was found to be independently associated with an increased risk of late AF

recurrent after PV isolation. However the authors do not cite of the data from CT cross sectional imaging studies such as the two references below for example: Hof I1, Chilukuri K, Arbab-Zadeh A, Scherr D, Dalal D, Nazarian S, Henrikson C, Spragg D, Berger R, Marine J, Calkins H. Does left atrial volume and pulmonary venous anatomy predict the outcome of catheter ablation of atrial fibrillation? *J Cardiovasc Electrophysiol*. 2009 Sep;20(9):1005-10. For example Stabile G1, Anselmino M2, Soldati E3, De Ruvo E4, Solimene F5, Iuliano A6, Sciarra L4, Bongiorno MG3, Calò L4, Gaita F2. Effect of left atrial volume and pulmonary vein anatomy on outcome of nMARQ? catheter ablation of paroxysmal atrial fibrillation. *J Interv Card Electrophysiol*. 2016 Oct 6. The data obtained from CT studies looking into PV diameter should be quoted especially as CT provides better image acquisition of the PVs especially as some of these studies were negative failed to show a link between PV anatomy and AF recurrence. It is a huge shame that the authors provide the data on redo ablation as the end point which is highly subjective and not data on the actual AF recurrence rate. Whilst I appreciate that they have cited this as a limitation and the reasons explained however I feel that basic information on the early AF rate for the population should identified and the link between PV diameter and AF recurrence should be provided to strengthen the hypothesis. This additional data should be provided if available. Pulmonary vein diameters is not something typically provided on an MRI. Hence was there any blinding of the MRI results to the outcomes? I appreciate the PV diameter was numerically higher for all 4 of the PVs among the recurrence group but was only significant for the right upper on multivariate analysis. The authors should additionally document the cumulative diameter for the 4 PVs in the recurrence vs non recurrence group as this would provide a stronger proof of concept as this way they may even be able to derive a more reliable cut off. The correlations between the LA size and PV diameter were really very weak and whilst statistically significant at an R2 of between 0.02 and 0.7 are really very low.

## PEER-REVIEW REPORT

**Name of journal:** World Journal of Cardiology

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**Title:** Clinical and anatomic predictors of need for repeat atrial fibrillation ablation

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CLASSIFICATION	LANGUAGE EVALUATION	SCIENTIFIC MISCONDUCT	CONCLUSION
<input type="checkbox"/> Grade A: Excellent	<input checked="" type="checkbox"/> Grade A: Priority publishing	Google Search:	<input type="checkbox"/> Accept
<input type="checkbox"/> Grade B: Very good	<input type="checkbox"/> Grade B: Minor language polishing	<input type="checkbox"/> The same title	<input type="checkbox"/> High priority for publication
<input checked="" type="checkbox"/> Grade C: Good		<input type="checkbox"/> Duplicate publication	
<input type="checkbox"/> Grade D: Fair	<input type="checkbox"/> Grade C: A great deal of language polishing	<input type="checkbox"/> Plagiarism	<input type="checkbox"/> Rejection
<input type="checkbox"/> Grade E: Poor		<input checked="" type="checkbox"/> No	<input type="checkbox"/> Minor revision
	<input type="checkbox"/> Grade D: Rejected	BPG Search:	<input checked="" type="checkbox"/> Major revision
		<input type="checkbox"/> The same title	
		<input type="checkbox"/> Duplicate publication	
		<input type="checkbox"/> Plagiarism	
		<input checked="" type="checkbox"/> No	

## COMMENTS TO AUTHORS

**Comments** Introduction. The authors state that "Although many studies have assessed predictors of AF recurrence after ablation, predictors of need for repeat ablation have been less well studied". I do not really agree with this statement since the predictors of AF recurrence are also predictors for repeat procedures. Please add a brief description of AF ablation procedure in Methods. How many patients underwent substrate modification? Which is your approach in these cases (CFAEs, lines)? How do you explain the high incidence of organized atrial tachycardias (39%) in repeat procedures? How many patients in repeat procedures displayed all veins isolated? Please provide data in this group of patients. The percentage of an extra-PV focus should be reported. The authors do not report data regarding ATs (mitral flutter, roof flutter, peri-PV ATs, reentries or focal sources). This is important since non-PV ATs are irrelevant to the anatomy of the PVs. On the contrary, non-PV ATs are possibly related to substrate modification. Study design is problematic. Mixed population with paroxysmal and persistent AF underwent different ablation strategies (PVI with or without substrate



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modification, RF vs Cryo). Many of these patients displayed recurrence of AT and not AF. As stated above AT recurrence is mainly related to substrate modification. It would be more proper to include paroxysmal AF patients with PVI and not substrate modification for the purpose of this study.

## PEER-REVIEW REPORT

**Name of journal:** World Journal of Cardiology

**Manuscript NO:** 32520

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**Reviewer's country:** Turkey

**Science editor:** Jin-Xin Kong

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<input type="checkbox"/> Grade B: Very good	<input type="checkbox"/> Grade B: Minor language polishing	<input type="checkbox"/> The same title	<input type="checkbox"/> High priority for publication
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## COMMENTS TO AUTHORS

To the authors, the manuscript is well written and highlights a popular topic with AF recurrence after pulmonary vein isolation.