

## PEER-REVIEW REPORT

**Name of journal:** World Journal of Radiology

**Manuscript NO:** 39330

**Title:** An Optimized Cardiac MRI Inversion Recovery Sequence for Metal Artifact Reduction and Accurate Myocardial Scar Assessment in Patients with Cardiac Implantable Electronic Devices

**Reviewer's code:** 03699990

**Reviewer's country:** China

**Science editor:** Li-Jun Cui

**Date sent for review:** 2018-04-26

**Date reviewed:** 2018-05-02

**Review time:** 6 Days

SCIENTIFIC QUALITY	LANGUAGE QUALITY	CONCLUSION	PEER-REVIEWER STATEMENTS
<input type="checkbox"/> Grade A: Excellent	<input type="checkbox"/> Grade A: Priority publishing	<input checked="" type="checkbox"/> Accept	Peer-Review:
<input checked="" type="checkbox"/> Grade B: Very good	<input checked="" type="checkbox"/> Grade B: Minor language	(High priority)	<input checked="" type="checkbox"/> Anonymous
<input type="checkbox"/> Grade C: Good	polishing	<input type="checkbox"/> Accept	<input type="checkbox"/> Onymous
<input type="checkbox"/> Grade D: Fair	<input type="checkbox"/> Grade C: A great deal of	(General priority)	Peer-reviewer's expertise on the
<input type="checkbox"/> Grade E: Do not	language polishing	<input type="checkbox"/> Minor revision	topic of the manuscript:
publish	<input type="checkbox"/> Grade D: Rejection	<input type="checkbox"/> Major revision	<input checked="" type="checkbox"/> Advanced
		<input type="checkbox"/> Rejection	<input type="checkbox"/> General
			<input type="checkbox"/> No expertise
			Conflicts-of-Interest:
			<input type="checkbox"/> Yes
			<input checked="" type="checkbox"/> No

### SPECIFIC COMMENTS TO AUTHORS

The authors developed a modified IR technique to alleviate the CIED-induced metal artifacts and improve the diagnostic image quality of LGE images in patients with CIEDs



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without increasing scan time or requiring additional hardware. Good work, Referral publication. The reference format is not uniform.

#### **INITIAL REVIEW OF THE MANUSCRIPT**

##### ***Google Search:***

- ☐ The same title
- ☐ Duplicate publication
- ☐ Plagiarism
- ☐ No

##### ***BPG Search:***

- ☐ The same title
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- ☐ Plagiarism
- ☐ No

## PEER-REVIEW REPORT

**Name of journal:** World Journal of Radiology

**Manuscript NO:** 39330

**Title:** An Optimized Cardiac MRI Inversion Recovery Sequence for Metal Artifact Reduction and Accurate Myocardial Scar Assessment in Patients with Cardiac Implantable Electronic Devices

**Reviewer's code:** 02325110

**Reviewer's country:** Germany

**Science editor:** Li-Jun Cui

**Date sent for review:** 2018-04-26

**Date reviewed:** 2018-05-05

**Review time:** 9 Days

SCIENTIFIC QUALITY	LANGUAGE QUALITY	CONCLUSION	PEER-REVIEWER STATEMENTS
<input type="checkbox"/> Grade A: Excellent	<input type="checkbox"/> Grade A: Priority publishing	<input type="checkbox"/> Accept	Peer-Review:
<input checked="" type="checkbox"/> Grade B: Very good	<input checked="" type="checkbox"/> Grade B: Minor language	(High priority)	<input checked="" type="checkbox"/> Anonymous
<input type="checkbox"/> Grade C: Good	polishing	<input type="checkbox"/> Accept	<input type="checkbox"/> Onymous
<input type="checkbox"/> Grade D: Fair	<input type="checkbox"/> Grade C: A great deal of	(General priority)	Peer-reviewer's expertise on the
<input type="checkbox"/> Grade E: Do not	language polishing	<input checked="" type="checkbox"/> Minor revision	topic of the manuscript:
publish	<input type="checkbox"/> Grade D: Rejection	<input type="checkbox"/> Major revision	<input type="checkbox"/> Advanced
		<input type="checkbox"/> Rejection	<input checked="" type="checkbox"/> General
			<input type="checkbox"/> No expertise
			Conflicts-of-Interest:
			<input type="checkbox"/> Yes
			<input checked="" type="checkbox"/> No

### SPECIFIC COMMENTS TO AUTHORS

The authors developed a modified inversion recovery (IR) technique to alleviate the metal artifacts that are induced by cardiac implantable electronic devices (CIED). By this

Approach, the diagnostic image quality of LGE images is improved in patients with CIEDs without increasing scan time or requiring additional hardware. The authors tested the newly developed technique in phantom experiments as well as in vivo scans. The results of this study are of great interest. The authors showed the capability of their technique for suppressing the hyperintensity artifacts without compromising myocardium nulling in the resulting LGE images. The manuscript adequately describes the background and significance of the study. In the discussion the authors summarize appropriately and self-critically the relevance to clinical practice as well as the limitations of their study. One concern is the small number of subjects that were enrolled in the study. As the authors say themselves future studies are needed to test the developed technique "on a large number of VT patients with inter- and intra-observer variability analysis using an image quality scoring System". Another concern is that the manuscript needs to be adjusted to the specifications as designated by the World Journal of Radiology (e.g. typeface, references).

## INITIAL REVIEW OF THE MANUSCRIPT

### *Google Search:*

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- ☒ No

### *BPG Search:*

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[ Y ] No

## PEER-REVIEW REPORT

**Name of journal:** World Journal of Radiology

**Manuscript NO:** 39330

**Title:** An Optimized Cardiac MRI Inversion Recovery Sequence for Metal Artifact Reduction and Accurate Myocardial Scar Assessment in Patients with Cardiac Implantable Electronic Devices

**Reviewer's code:** 02714390

**Reviewer's country:** United States

**Science editor:** Li-Jun Cui

**Date sent for review:** 2018-04-26

**Date reviewed:** 2018-05-07

**Review time:** 11 Days

SCIENTIFIC QUALITY	LANGUAGE QUALITY	CONCLUSION	PEER-REVIEWER STATEMENTS
<input type="checkbox"/> Grade A: Excellent	<input checked="" type="checkbox"/> Grade A: Priority publishing	<input type="checkbox"/> Accept	Peer-Review:
<input type="checkbox"/> Grade B: Very good	<input type="checkbox"/> Grade B: Minor language	(High priority)	<input checked="" type="checkbox"/> Anonymous
<input checked="" type="checkbox"/> Grade C: Good	polishing	<input type="checkbox"/> Accept	<input type="checkbox"/> Onymous
<input type="checkbox"/> Grade D: Fair	<input type="checkbox"/> Grade C: A great deal of	(General priority)	Peer-reviewer's expertise on the
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publish	<input type="checkbox"/> Grade D: Rejection	<input type="checkbox"/> Major revision	<input checked="" type="checkbox"/> Advanced
		<input type="checkbox"/> Rejection	<input type="checkbox"/> General
			<input type="checkbox"/> No expertise
			Conflicts-of-Interest:
			<input type="checkbox"/> Yes
			<input checked="" type="checkbox"/> No

## SPECIFIC COMMENTS TO AUTHORS

This manuscript proposes the use of a modified inversion recovery sequence to mitigate effects of cardiac implantable electronic devices on MR images of the heart evaluating

delayed gadolinium enhancement. Scans were first performed in phantoms and then tested in vivo. The methodology was capable of suppressing hyper intensities on images caused by the metal implants without compromising myocardial signal. The current proposal appears similar to modified wide-band pulses as described in reference 20 (Rashid et al) and it is unclear what the improvements in the current study are compared to the previous work except it appears to be on the Philips platform compared to the Siemens platform. The authors should emphasize these differences to make the manuscript more appealing to the audience. A lot of the language and structure of the manuscript is also very similar in scope to the manuscript by Rashid et al. (PMID: 25772155). Manuscripts is also limited by a small sample size. Specific comments: 1. The authors should also address how geometric distortions caused by CIEDs will be handled. 2. This manuscript will benefit from a direct comparison with an established approach such as MAVRICK or SEMAC metal artifact reduction acquisitions. 3. An independent verification of scar should be used to determine if the wide-band IR is truly effective in better quantifying LGE images. 4. please discuss implications for acceptability of wideband techniques at higher field strengths.

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### *BPG Search:*

- ☐ The same title



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[ Y ] No