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PEER-REVIEW REPORT

Name of journal: World Journal of Cardiology

Manuscript NO: 50559

Title: Radial artery access site complications during cardiac procedures, clinical implications and potential solutions: the role of nitric oxide

Reviewer's code: 03217790

Position: Peer Reviewer

Academic degree: MD

Professional title: PhD

Reviewer's country: United States

Author's country: United Kingdom

Reviewer chosen by: Artificial Intelligence Technique

Reviewer accepted review: 2019-09-09 04:38

Reviewer performed review: 2019-09-09 04:49

Review time: 1 Hour

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 type="checkbox"/> Grade B: Very good	<input type="checkbox"/> Grade B: Minor language	(High priority)	<input 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 type="checkbox"/> Advanced
		<input type="checkbox"/> Rejection	<input type="checkbox"/> General
			<input type="checkbox"/> No expertise
			Conflicts-of-Interest:
			<input type="checkbox"/> Yes
			<input type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS



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Generally well-written if long review. Specific comments: 1) The review emphasizes NO donors for spasmolytics, but the most effective agent is verapamil 2) Radial artery cannulation - "Puncture access is usually around 1-2 cm above the cross striation of the patient's right palm" - consider using a bony marker 3) "A single-wall anterior puncture is performed" - this misstates the state of the field where probably 40% perform the technique with a double wall puncture 4) Suggest referencing the Greek study indicating that moderate sedation reduces the incidence of spasm - JACC Cardiovasc Interv. 2013 Mar;6(3):267-73. 5) The manuscript offers the tantalizing prospect of adding coatings to the sheath to locally deliver NO, which makes a lot of sense, but are there any examples of this in other fields? What is the safety of zeolites and MOFs in the circulation? 6) The manuscript could do well by focusing on just the area of spasm rather than painstakingly reviewing all of radial access technique and complications

INITIAL REVIEW OF THE MANUSCRIPT

Google Search:

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

BPG Search:

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

PEER-REVIEW REPORT

Name of journal: World Journal of Cardiology

Manuscript NO: 50559

Title: Radial artery access site complications during cardiac procedures, clinical implications and potential solutions: the role of nitric oxide

Reviewer's code: 00227341

Position: Editorial Board

Academic degree: MD

Professional title: Doctor

Reviewer's country: Italy

Author's country: United Kingdom

Reviewer chosen by: Jia-Ping Yan

Reviewer accepted review: 2019-09-09 09:00

Reviewer performed review: 2019-09-17 09:12

Review time: 8 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 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 checked="" 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 checked="" 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

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The Authors present a review article for describing the radial artery approach (TRA) to vascular access in PCI, the mechanisms that are involved in radial artery spasm (focusing on NO), discuss the advantages and disadvantages of current strategies to reduce spasm, and highlight the potential of nanoporous materials for use in this setting. TRA is of increasing popularity among interventional specialists and patients undergoing percutaneous coronary and peripheral diagnostic and revascularization procedures. Indeed, TRA offers important advantages over transfemoral access, including improve patient comfort, early patient ambulation, lower vascular complications, lower health care costs, and reduced adverse cardiovascular events including mortality. Still, complications of TRA exist, with radial artery occlusion occurring in up to 30% of cases in a prospective vascular ultrasound study. Because of the dual blood supply to the hand, radial artery occlusion is generally asymptomatic and overlooked, though at times it may be associated with paresthesia. The Authors focus the article on the problem of the spasm of the RA. It's Known that RA spasm can be minimized with the use of intra-arterial vasodilators. Spasmolytic agents should be used after sheath insertion and may also be used with each catheter exchange or before sheath removal. The optimal agent or combination of agents is not defined, but most investigations have focused on calcium channel blockers or nitroglycerin. A recent meta-analysis concluded that verapamil 5 mg, with or without nitroglycerin, was the most effective and frequently used spasmolytic agent (Kwok CS, Rashid M, Fraser D, Nolan J, Mamas M. Intra-arterial vasodilators to prevent radial artery spasm: a systematic review and pooled analysis of clinical studies. *Cardiovasc Revasc Med*. 2015;16:484–490. doi: 10.1016/j.carrev.2015.08.008). The bibliographic data are not recent and moreover not complete. The data about the spasm of RA is not complete. Data on other possible complications is also few. I suggest reviewing recent literature, for example: Peter J. Maso et al. AHA Scientific Statement: An Update on Radial



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Artery Access and Best Practices for Transradial Coronary Angiography and Intervention in Acute Coronary Syndrome A Scientific Statement From the American Heart Association. Circ Cardiovasc Interv. 2018;11:e000035. DOI: 10.1161/HCV.0000000000000035 I suggest to review the article based on the most recent literature.

INITIAL REVIEW OF THE MANUSCRIPT

Google Search:

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

BPG Search:

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- ☐ Plagiarism
- ☒ No