

## PEER-REVIEW REPORT

**Name of journal:** World Journal of Critical Care Medicine

**Manuscript NO:** 48644

**Title:** Anticoagulation with direct thrombin inhibitors during extracorporeal membrane oxygenation

**Reviewer's code:** 03189996

**Reviewer's country:** United States

**Science editor:** Jia-Ping Yan

**Reviewer accepted review:** 2019-06-18 01:40

**Reviewer performed review:** 2019-06-18 19:46

**Review time:** 18 Hours

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 checked="" type="checkbox"/> Grade B: Very good	<input 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 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 of the manuscript (MS) review the incidence of heparin-induced thrombocytopenia (HIT) during ECMO, and review recent experience with the off-label use of direct thrombin inhibitors (DTIs) as heparin alternative agents. This is a rather

brief literature survey with no Figures / Tables. MINOR CONCERNS: 1. The pathophysiology of HIT and a comprehensive review of alternatives to heparin have been reviewed elsewhere (e.g. Salter et al., J Am Coll Cardiol 2016, PMID: 27230048). 2. Additional contemporary references on HIT incidence and outcome associated with ECMO could be added, e.g. Choi et al., Ann Cardiothorac Surg 2019, PMID: 30854309; Kimmoun et al., Intensive Care Med 2018, PMID: 30136139, Glick et al., J Crit Care 2015, PMID: 26363901. Specifically, the retrospective study by Kimmoun et al. suggests that prevalence of HIT among patients under VA-ECMO is extremely low at 0.36%. This is in contrast with your statement on P5 second para where you state that “complications to UFH are common” and “incidence of HIT is... 2.6%”. You acknowledge that these data do not originate from ECMO patients; study by Kimmoun et al. looked specifically at this population. The MS should be updated and revised accordingly. 3. Most larger studies do not show a significant difference in bleeding with use of heparin vs. DTIs. However, the key fact that “DTIs do not have target-specific antidote” is only briefly mentioned at P7 end of first para in your MS. This could be of concern should bleeding arise, specifically during insertion or removal of ECMO. An expanded comment on that would be appreciated (feel free to add comments to P15 bottom of page section on re-instating anticoagulation protocol with DTIs when failed to wean from ECMO after discontinuation of DTIs). 4. This MS reviews literature from the adult population. For informative purposes, a reference to a recent review of heparin alternatives for ECMO in pediatric population should be included – Pollak et al., Pefusion 2018, PMID: 29788841.

## INITIAL REVIEW OF THE MANUSCRIPT

### *Google Search:*

- ☐ The same title
- ☐ Duplicate publication



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[ ] Plagiarism

[ Y ] No

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[ ] Plagiarism

[ Y ] No

## PEER-REVIEW REPORT

**Name of journal:** World Journal of Critical Care Medicine

**Manuscript NO:** 48644

**Title:** Anticoagulation with direct thrombin inhibitors during extracorporeal membrane oxygenation

**Reviewer's code:** 02904354

**Reviewer's country:** China

**Science editor:** Jia-Ping Yan

**Reviewer accepted review:** 2019-06-19 06:35

**Reviewer performed review:** 2019-06-26 15:11

**Review time:** 7 Days and 8 Hours

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 checked="" 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 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

This review paper is of clinical importance and well written. It should be eligible for publication in this journal. I have some minor comments. The clinical evidence regarding use of DTI in ECMO patients should be carefully and systematically reviewed



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in a table. After the occurrence of abbreviation of "direct thrombin inhibitors", please use the abbreviations. Similar errors should be carefully reviewed.

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

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

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- ☐ Plagiarism
- ☐ No

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

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- ☐ Duplicate publication
- ☐ Plagiarism
- ☐ No

## PEER-REVIEW REPORT

**Name of journal:** World Journal of Critical Care Medicine

**Manuscript NO:** 48644

**Title:** Anticoagulation with direct thrombin inhibitors during extracorporeal membrane oxygenation

**Reviewer's code:** 00502932

**Reviewer's country:** United States

**Science editor:** Jia-Ping Yan

**Reviewer accepted review:** 2019-06-19 20:31

**Reviewer performed review:** 2019-07-02 01:34

**Review time:** 12 Days and 5 Hours

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

Well-written concise but very useful review of use of these alternative anticoagulants in ECMO. Should be very clinically helpful.



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## INITIAL REVIEW OF THE MANUSCRIPT

### *Google Search:*

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

### *BPG Search:*

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