

PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	The in-hospital mortality of cardiogenic shock complicating ST-elevation myocardial infarction in Malaysia: A retrospective analysis of the Malaysian National Cardiovascular Database (NCVD) registry.
AUTHORS	Venkatason, Padmaa; Zubairi, Yong; Wan Ahmad, Wan; Hafidz, Muhammad; Ismail, Muhammad Dzafir; Hadi, Mohd; Zuhdi, Ahmad Syadi Mahmood

VERSION 1 - REVIEW

REVIEWER	Laxman Dubey Crimson Hospital, Nepal
REVIEW RETURNED	09-Sep-2018

GENERAL COMMENTS	<p>The authors analyzed the nationwide data to see the in-hospital outcome of cardiogenic shock (CS) complicating ST-elevation MI in Malaysia. They concluded that the mortality in CS complicating MI is high and there is 40% risk reduction after PCI, although PCI rate is low.</p> <p>Few comments: Methods: 1. What is the whole incidence of cardiogenic shock in your patients with acute ST elevation MI? 2. Is RV MI included? If so, the incidence of cardiogenic shock must be more than reported. 3. Who performed the Killip classification? Was it blinded to the outcome? 4. Were patients treated with inotropes excluded from this analysis? Please specify.</p> <p>Results: 4. Although there is no clear evidence of any clinical benefit from IABP in randomized trials, several studies have shown improved outcome after IABP in patients with cardiogenic shock undergoing primary PCI. Did you choose selected patients? 5. More than 80% of patients with STEMI and cardiogenic shock have multivessel disease. In such patients whether complete revascularization or the culprit vessel only angioplasty performed? 6. What was the strategy in left main disease with cardiogenic shock? Whether such patients were excluded?</p>
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REVIEWER	SONGKWAN SILARUKS Department of Medicine, Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand
REVIEW RETURNED	11-Sep-2018

GENERAL COMMENTS	<p>There have been limitations and several points to be clarified</p> <ol style="list-style-type: none"> 1. How to differentiate the “true cardiogenic shock” from “other shock”? 2. No data on intra-aortic balloon pump or assist devices in this registry 3. No data about renal function, left ventricular ejection fraction that might be very important for the patient prognosis, mortality, clinical outcome 4. Unexpectedly low smoking rate, might be incomplete data? 5. Uni-variate analysis could not be interpreted or exactly concluded 6. Low rate of antiplatelet prescription particularly in the CS, why? 7. The results are generally similar to other study, no unique or any new, interesting aspect to be learned 8. Might be considered to be published in “local” journal?
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VERSION 1 – AUTHOR RESPONSE

Reviewers' Comments to Author:

Reviewer: 1

Reviewer Name: Laxman Dubey

Institution and Country: Crimson Hospital, Nepal

Please state any competing interests or state ‘None declared’: None declared

The authors analyzed the nationwide data to see the in-hospital outcome of cardiogenic shock (CS) complicating ST-elevation MI in Malaysia. They concluded that the mortality in CS complicating MI is high and there is 40% risk reduction after PCI, although PCI rate is low.

Few comments:

Methods:

1. What is the whole incidence of cardiogenic shock in your patients with acute ST elevation MI?

- The incidence of cardiogenic shock in our patients is 10.6% (1753 out of 16517 patients). I have added this in the abstract and the manuscript (result section)

2. Is RV MI included? If so, the incidence of cardiogenic shock must be more than reported.

- All STEMI patients were included. The definition of cardiogenic shock on admission for this registry is: Hypotension [measured as systolic blood pressure <90 mmHg], and evidence of peripheral vasoconstriction [oliguria, cyanosis or sweating]

3. Who performed the Killip classification? Was it blinded to the outcome?

- The medical team in the emergency department performed the initial assessment on admission. The assessment is later confirmed by the cardiology team on call. They were all blinded.

4. Were patients treated with inotropes excluded from this analysis? Please specify.

- No. Patients treated with inotropes for cardiogenic shock were included. They fall into the cardiogenic shock group if they fulfill the above stated criteria.

Results:

4. Although there is no clear evidence of any clinical benefit from IABP in randomized trials, several studies have shown improved outcome after IABP in patients with cardiogenic shock undergoing primary PCI. Did you choose selected patients?

- We include all patients with STEMI as this is an all comer registry. However, this registry focuses on the clinical aspect of ACS. Hence the detail in the use of IABP is not well captured by the registry data.

5. More than 80% of patients with STEMI and cardiogenic shock have multivessel disease. In such patients whether complete revascularization or the culprit vessel only angioplasty performed?

- Unfortunately, this registry (NCVD-ACS) focuses on the clinical aspects of ACS. Hence the details of the PCI procedures was not well captured.

6. What was the strategy in left main disease with cardiogenic shock? Whether such patients were excluded?

- We analyse all patients with STEMIs regardless of the treatment received. So the above group of patients were included. Unfortunately, we do not have a good capture of all the angiogram procedural details to be included in the analysis.

Reviewer: 2

Reviewer Name: SONGKWAN SILARUKS

Institution and Country: Department of Medicine, Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand

Please state any competing interests or state 'None declared': None declared

There have been limitations and several points to be clarified

1. How to differentiate the "true cardiogenic shock" from "other shock"?

- The NCVD- ACS registry defines cardiogenic shock as follows:

- Hypotension [measured as systolic blood pressure <90 mmHg], and evidence of peripheral vasoconstriction [oliguria, cyanosis or sweating]

- To differentiate this from other causes of shock, the above needs to be accompanied by ST elevation in the ECG and symptoms suggestive of myocardial ischaemia

2. No data on intra-aortic balloon pump or assist devices in this registry

- The NCVD-ACS registry focuses on the clinical aspect of ACS. It does not capture the detail in the coronary angiogram or IABP use. Hence we did not include it in our analysis

3. No data about renal function, left ventricular ejection fraction that might be very important for the patient prognosis, mortality, clinical outcome

- There is an analysis of patients with chronic kidney disease (defined as baseline creatinine >200 micromol/L by the NCVD-ACS registry) in Table 1.

- We have added a new column in table 1 to compare the LVEF in both groups. Please refer to Table 1 last column (highlighted)

4. Unexpectedly low smoking rate, might be incomplete data?

- Our result shows that history of smoking is about 60-70% of all patients (refer table 1). This rate is in our opinion is not relatively low.

5. Uni-variate analysis could not be interpreted or exactly concluded

- There are important parts of the results where we performed multivariate analysis. Examples are results from table IV, V, VII. (The adjusted Risk ratios for confounding factors in clinical outcome, Binary multivariate logistic regression for predictors of cardiogenic shock)

6. Low rate of antiplatelet prescription particularly in the CS, why?

- We noticed this as well. Unfortunately, It is difficult to be certain on reason for such trend. Unless we actually dissect each medical record to find out the very reason behind not prescribing the anti-platelets.

7. The results are generally similar to other study, no unique or any new, interesting aspect to be learned

- The very high mortality rate in cardiogenic shock is already expected. Nevertheless, the study also described the characteristics of patients in the setting of multi racial population with high CV risk burden and relatively sub-optimal utilisation of coronary intervention from this part of south east asia. Hence this study adds on new data to the existing one particularly from this region of the world.

8. Might be considered to be published in "local" journal?

- We agree that this study only represents STEMI patients in Malaysia. However in the era of open access journal, the issue of local or international journal publication has become less important. The result of this study would be easily accessible from locally and internationally. This would contribute to the body of knowledge in cardiology and provide an overview to the international as well as local community at the same time.

VERSION 2 – REVIEW

REVIEWER	Laxman Dubey Crimson Hospital Nepal
REVIEW RETURNED	26-Jan-2019

GENERAL COMMENTS	Author addressed my concerns sufficiently.
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REVIEWER	Songkwan Silaruks Department of Medicine, Faculty of Medicine, KHon Kaen University, Khon Kaen, Thailand
REVIEW RETURNED	11-Feb-2019

GENERAL COMMENTS	May be more fruitful if the author could compare the mortality rate with other institutions in Malaysia or other Asian countries, and propose the way to lower the mortality rate.
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