Consciousness Equals Life: Survival in Cardiac Arrest Patients Undergoing PCI is Markedly Associated with Neurological Status

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Background

- Nearly 700,000 cardiac arrests (CA) happen annually in the United States between in hospital and out of hospital cardiac arrests[1,2].
- A substantial portion are attributed to an acute coronary syndrome (ACS) requiring urgent percutaneous coronary interventions (PCI).

Objectives

- We sought to examine pre-procedural level of consciousness (LOC) as a predictor for in-hospital outcomes after cardiac arrest in patients undergoing PCI

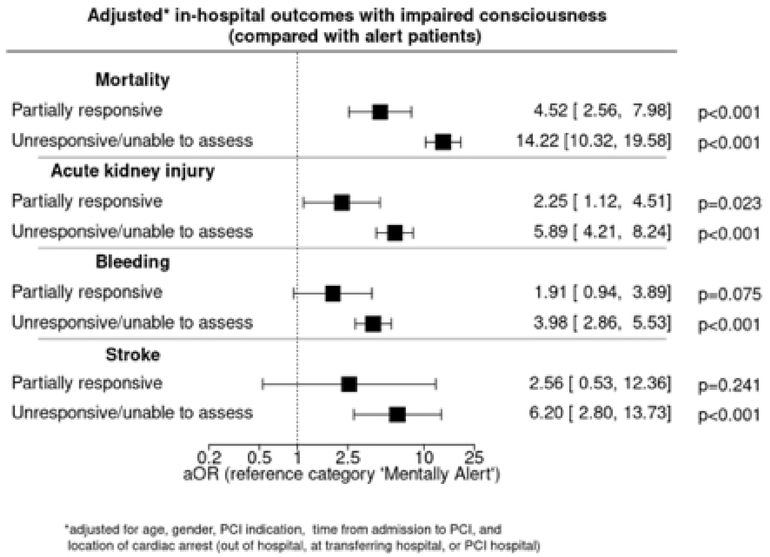
Methods

- Using a statewide clinical PCI registry, we included 2186 patients who underwent PCI after a cardiac arrest between 4/2018-3/2021 at 48 Michigan hospitals.
- Levels of consciousness were defined per the AVPU (alert, verbal, pain, unresponsive) as per the National Cardiovascular Data Registry (NCDR) data dictionary.
- For ease of analysis, pre-PCI LOC was categorized as mentally alert, partially responsive (responsive to pain and/or verbal stimuli), and unresponsive/unable to assess.
- LOC was not recorded in 240 patients and these patients were not included in our analysis.
- Post-PCI outcomes included mortality, bleeding, stroke, and acute kidney injury (AKI).
- Logistic regression models adjusting for demographic and clinical variables were used to obtain adjusted odds ratios (aORs).

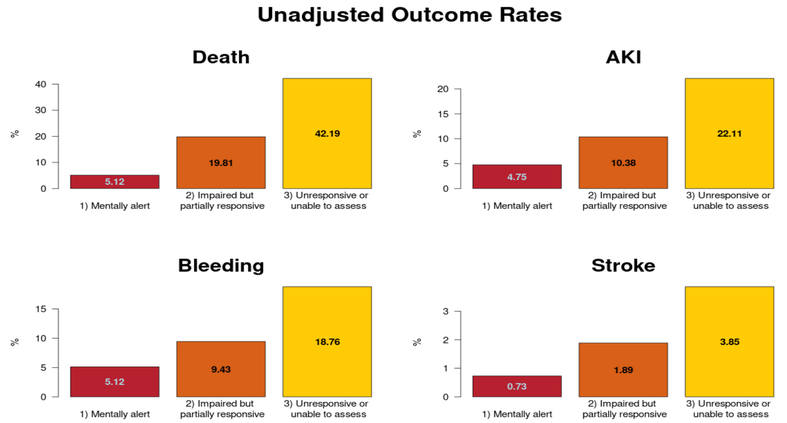
Results

Baseline Pre-procedural Characteristics

	Mentally Alert (N=1094)	Partially Responsive (N=106)	Unresponsive/ Unable to Assess (N=986)
Age (years)	63.0	64.43	62.86
Gender (% Male)	73.5	75.5	71.7
Hypertension (%)	72.5	75.5	69.4
Dyslipidemia (%)	64.5	66.0	57.7
Current Tobacco Use (%)	32.5	34.0	34.7
Diabetes (%)	28.9	40.6	31.6
Hemodialysis (%)	5.7	6.6	5.1
Heart Failure (%)	31.4	34.0	37.3



*adjusted for age, gender, PCI indication, time from admission to PCI, and location of cardiac arrest (out of hospital, at transferring hospital, or PCI hospital)



Conclusions

- Pre-PCI LOC is associated with in-hospital outcomes after PCI among CA patients.
- Mentally alert patients had substantially lower risks of death, stroke, AKI, and bleeding compared with patients with LOC impairment.

Limitations

- This study examined initial hospitalization and not subsequent hospitalizations potentially related to the initial presentation.

References

1. Committee on the Treatment of Cardiac Arrest: Current Status and Future Directions; Board on Health Sciences Policy; Institute of Medicine; Graham R, McCoy MA, Schultz AM, editors. Strategies to Improve Cardiac Arrest Survival: A Time to Act. Washington (DC): National Academies Press (US); 2015 Sep 29. 2, Understanding the Public Health Burden of Cardiac Arrest: The Need for National Surveillance
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