

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

Background

- Nearly 700,000 cardiac arrests (CA) happen are United States between in hospital and out of h 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).





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Results

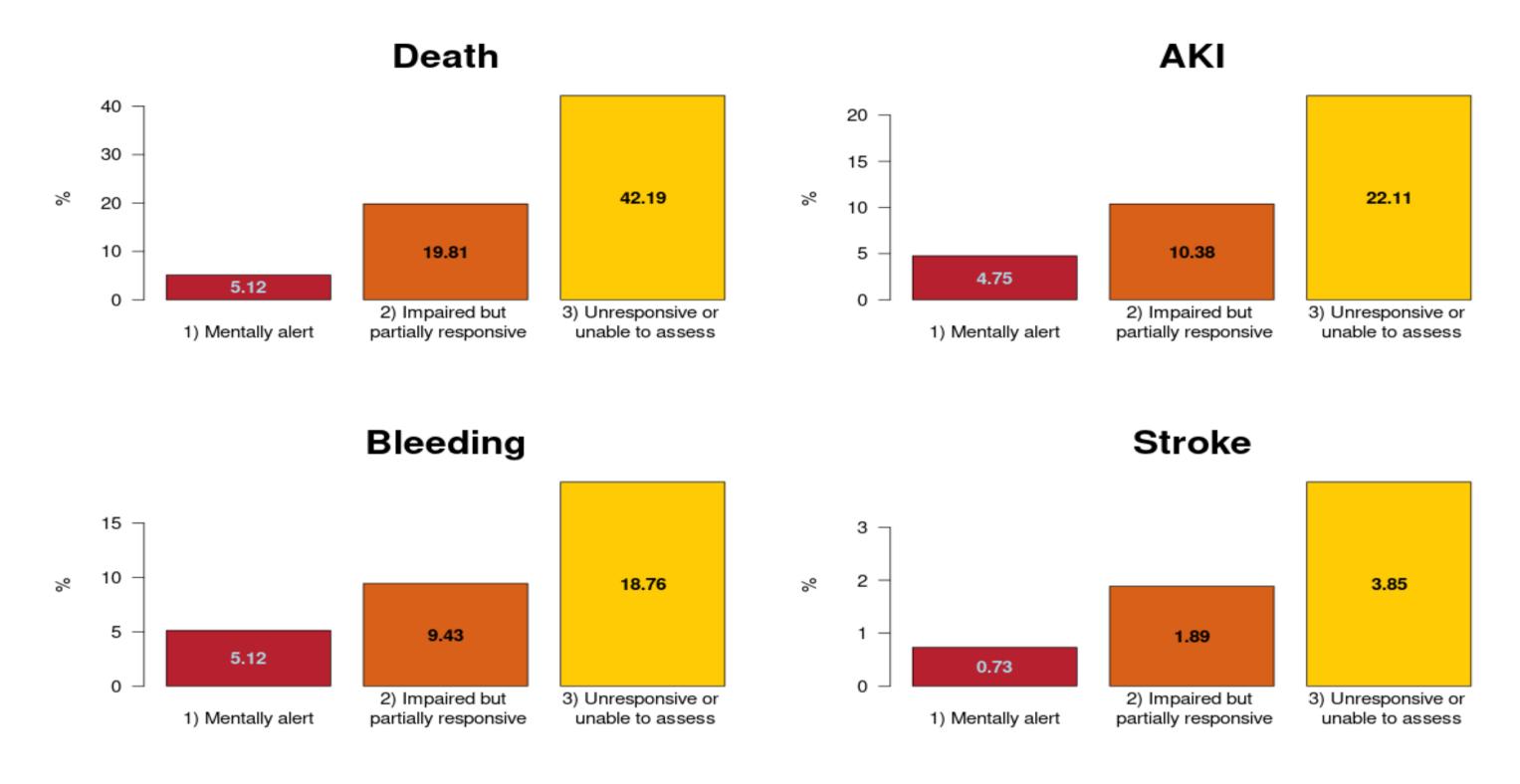
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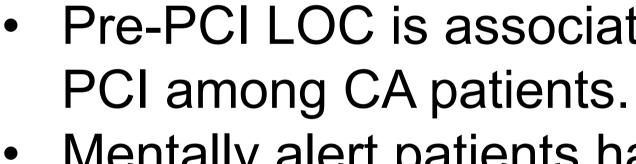
Bas	eline Pre-procedural Characteristics		
	Mentally Alert (N=1094)	Partially Responsive (N=106)	Unresponsive/ Unable to Assess (N=986)
Age (years)	63.0	64.43	62.86
Gender (% Male)	73.5	75.5	71.7
Hypertension (%)	72.5	75.5	69.4
Dyslipidemia (%)	64.5	66.0	57.7
Current Tobacco Use (%)	32.5	34.0	34.7
Diabetes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

Adjusted* in-hospital outcomes with impaired consciousness (compared with alert patients)

Mortality		
Partially responsive	⊢-■	4.52 [2.56, 7.98]
Unresponsive/unable to assess	H	14.22 [10.32, 19.58]
Acute kidney injury		
Partially responsive		2.25 [1.12, 4.51]
Unresponsive/unable to assess	H	5.89 [4.21, 8.24]
Bleeding		
Partially responsive	i	1.91 [0.94, 3.89]
Unresponsive/unable to assess	HEH	3.98 [2.86, 5.53]
Stroke		
Partially responsive		2.56 [0.53, 12.36]
Unresponsive/unable to assess	· · ·	6.20 [2.80, 13.73]

*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)





- impairment.
- presentation.

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 Holmberg MJ, Ross CE, Fitzmaurice GM, Chan PS, Duval-Arnould J, Grossestreuer AV, Yankama T, Donnino MW, Andersen LW; American Hear Association's Get With The Guidelines–Resuscitation Investigators. Annual Incidence of Adult and Pediatric In-Hospital Cardiac Arrest in the United States. Circ Cardiovasc Qual Outcomes. 2019 Jul 9;12(7):e005580. PMID: 31545574; PMCID: PMC6758564.



Unadjusted Outcome Rates

Conclusions

Pre-PCI LOC is associated with in-hospital outcomes after

 Mentally alert patients had substantially lower risks of death, stroke, AKI, and bleeding compared with patients with LOC

Limitations

• This study examined initial hospitalization and not subsequent hospitalizations potentially related to the initial

References



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