

Henry Ford Health

## Henry Ford Health Scholarly Commons

---

Cardiology Meeting Abstracts

Cardiology/Cardiovascular Research

---

3-8-2022

### **RACE-IT- RAPID MYOCARDIAL INFARCTION EXCLUSION USING AN ACCELERATED HIGH-SENSITIVITY CARDIAC TROPONIN I PROTOCOL: A PROSPECTIVE TRIAL**

James McCord

Bernard Cook

Chaun M. Gandolfo

Sachin Parikh

Howard A. Klausner

*See next page for additional authors*

Follow this and additional works at: [https://scholarlycommons.henryford.com/cardiology\\_mtgabstracts](https://scholarlycommons.henryford.com/cardiology_mtgabstracts)

---

---

## **Authors**

James McCord, Bernard Cook, Chaun M. Gandolfo, Sachin Parikh, Howard A. Klausner, Khaled Abdul-Nour, Aaron Lewandowski, Michael P. Hudson, Giuseppe Perrotta, Bryan Zweig, Satheesh Gunaga, David E. Lanfear, Ryan Gindi, Phillip D. Levy, Nicholas L. Mills, Simon Mahler, Henry E. Kim, Shooshan Danagoulian, Amy Tang, Hashem N. Nassereddine, Ahmed Oudeif, Kelly Malette, Seth Krupp, Catriona Keerie, and Joseph B. Miller

---



## Ischemic Heart Disease

### RACE-IT- RAPID MYOCARDIAL INFARCTION EXCLUSION USING AN ACCELERATED HIGH-SENSITIVITY CARDIAC TROPONIN I PROTOCOL: A PROSPECTIVE TRIAL

Oral Contributions  
Room 146C  
Monday, April 4, 2022, 8:40 a.m.-8:50 a.m.

Session Title: Highlighted Original Research: Ischemic Heart Disease and the Year in Review  
Abstract Category: 22. Ischemic Heart Disease: Clinical Science  
Presentation Number: 913-04

Authors: James K. McCord, Bernard Cook, Chaun Gandolfo, Sachin Parikh, Howard Klausner, Khaled Abdul-Nour, Aaron Lewandowski, Michael Peter Hudson, Giuseppe S. Perrotta, Bryan Zweig, Satheesh Gunaga, David E. Lanfear, Ryan Gindi, Phillip David Levy, Nicholas L. Mills, Simon Mahler, Henry E. Kim, Shooshan Danagoulian, Amy Tang, Hashem Nassereddine, Ahmed Oudeif, Kelly Malette, Seth Krupp, Catriona Keerie, Joseph Miller, Henry Ford Health System, Detroit, MI, USA, Wayne State University, Detroit, MI, USA

**Background:** We compared the safety of our standard protocol to a new 0/1-hour high-sensitivity cardiac troponin I (hs-cTnI) protocol for exclusion of myocardial infarction (MI).

**Methods:** A stepped-wedge randomized trial of patients evaluated for possible MI in 9 Emergency Departments (ED) (urban and suburban) in the Henry Ford Health System (Detroit, MI) were studied from 7/2020-3/2021. Trial arms included the new 0/1-hour protocol and standard care. A hs-cTnI assay from Beckman Coulter was used (99th percentile 18 ng/L). Patients were excluded if any hs-cTnI was >18 ng/L within 3 hours or they were admitted to the hospital. In the 0/1-hour algorithm, MI was excluded if hs-cTnI <4 ng/L at time 0, or = 4 ng/L at time 0 with 1 hour <8 ng/L. The algorithm advised ED discharge if patients ruled-out by the 0/1-hour protocol. Otherwise, the protocol included another hs-cTnI at 3 hours. In the standard care arm, hs-cTnI was measured at 0 and 3 hours with values ≤18 ng/L used to exclude AMI and guide ED discharge decisions. The primary outcome was adjudicated death or MI at 30 days. The analysis included a mixed effect model adjusting for ED site, time, sex, age, and race.

**Results:** There were 22,345 patients in the trial. At 30 days there were 24 deaths and 26 MIs. There was no significant difference between the death/MI rate between the standard of care group and the accelerated protocol (Table).

**Conclusion:** Implementation of the 0/1-hour algorithm to evaluate for MI in the ED was safe when compared to standard care.

#### Adverse Events at 30 Days

	All	Standard care	Rapid rule-out	Adjusted odds ratio (95% CI)	P value
Participants, n	22345	9488	12857		
Myocardial infarction/all-cause death, n (%)	50 (0.22)	18 (0.19)	32 (0.25)	0.82 (0.30-2.26)	0.71
All-cause death, n (%)	24 (0.11)	13 (0.14)	11 (0.09)	0.44 (0.18-1.04)	0.61
Non-cardiac death, n (%)	24 (0.11)	13 (0.14)	11 (0.09)	0.44 (0.18-1.04)	0.61
Myocardial infarction, n (%)	26 (0.12)	5 (0.05)	21 (0.16)	1.95 (0.50-7.99)	0.34
-Type 1 myocardial infarction, n (%)	8 (0.04)	4 (0.04)	4 (0.03)	0.04 (0.00-0.57)	0.02
-Type 2 myocardial infarction, n (%)	18 (0.08)	1 (0.01)	17 (0.13)	12.6 (1.70-94)*	0.01

\*Only unadjusted OR reported due to challenge fitting model