

 MYOCARDIAL ISCHEMIA AND INFARCTION

## INDUCED HYPOTHERMIA IMPROVES SURVIVAL IN CARDIAC ARREST PATIENTS

ACC Poster Contributions

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Session Title: Hypothermic Therapy for Cardiac Arrest

Abstract Category: Cardiopulmonary Resuscitation/Emergency Cardiac Care/Shock

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**Background:** Survival is poor after prolonged cardiac arrest. Induced hypothermia (IH) improves outcome, but enrollment criteria in published studies were stringent. Also, it is unclear what the maximum time delay is for IH to be effective.

**Methods:** We studied consecutive arrest patients admitted to our cardiac / intensive care unit in a real world setting. Patients with & without IH were compared. Patients were considered for IH, if time from arrest to resuscitation was 5 -10 minutes, and they were neurologically unresponsive after return of spontaneous circulation (ROSC). 32 -33 degrees Celsius cooling protocol was achieved for 24 hours: iv 30ml/kg iced saline; room temperature 15 degrees; ventilator temperature 31 degrees; cooling blanket; wet towels over torso; ice packs around head, axillae, groins; room fans; neuromuscular blockade, sedation & analgesia. Patients were supported hemodynamically as needed.

**Results:** From October 2005 - December 2008, 249 arrest patients were admitted, of which 59 received IH and 190 did not. Both groups received usual intensive care. There was no significant difference in age in the 2 groups (range 17 - 92 years). Majority of patients 48 / 59 (81%) of IH group were out-of-hospital arrests, compared to only 74 / 190 (39%) of non-IH group. Also, 45 / 59 (76%) of the IH group had Glasgow Coma Score GCS  $\leq$  6, while only 84/190 (44%) of the non-IH group had GCS  $\leq$  6 ( $p=0.03$ ), reflecting more severe neurologic deficit on admission in the IH group. Overall, 35/59 (59%) of the IH group died, compared to 96/190 (50%) of the non-IH group ( $p=NS$ ). However, for the patients admitted with GCS  $\leq$  6, there was a significant benefit to the IH group with mortality 24/45 (53%), compared to 61/84 (72%) mortality in the non-IH group ( $p=0.03$ ). Furthermore this benefit was more pronounced in those IH patients whose delay from ROSC to initiation of IH was  $<180$  minutes in which only 10/23 (43%) died, compared to patients whose delay to IH was  $>180$  minutes, where 14/22 (63%) died ( $p=0.02$ ).

**Conclusion:** In a real world setting, cardiac arrest patients who have severe neurologic deficit on admission seem to derive survival benefit from IH, particularly if the time delay to IH is less than 180 minutes.