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## **Combining therapeutic hypothermia and emergent coronary angiography in out-of-hospital cardiac arrest survivors: Optimal post-arrest care for the best patient**

### **Abstract**

#### **BACKGROUND:**

Aggressive post-resuscitation care, in particular combining mild therapeutic hypothermia (MTH) with early coronary angiography (CAG) and percutaneous coronary intervention (PCI), may improve prognosis after out-of-hospital cardiac arrest (OHCA).

#### **OBJECTIVES:**

The study aims to assess the value of immediate CAG or PCI in comatose survivors after OHCA treated with MTH and their association with outcomes.

#### **METHODS:**

Observational, prospective analysis of all comatose, resuscitated patients treated with MTH at a tertiary centre and undergoing CAG or PCI  $\leq 6$  hours after OHCA, or non-invasively managed. Primary outcomes were 30-day and 1-year survival.

#### **RESULTS:**

From March 2004-December 2012, 141 (51%) out of 278 comatose patients after cardiac OHCA were treated with MTH (median age: 64.5 (interquartile range 55-73) years, males: 67%, first shockable rhythm: 70%, witnessed OHCA: 94%, interval OHCA-resuscitation  $\leq 20$  min: 81%). Ninety-seven patients (69%) underwent early CAG, and 45 (32%) of them PCI. Patients undergoing CAG or PCI had a more favourable risk profile than subjects non-invasively managed. PCI treated patients had more bleedings, but no stent thrombosis occurred. Thirty-day and one-year unadjusted total mortality rates were 50% and 72% for non-invasively managed patients, 26% and 38.7% for patients submitted only to CAG and 32% and 36.6% for patients treated with PCI ( $p=0.0435$  for early death, and  $p<0.0001$  for one-year mortality, respectively). However, a propensity-matched score analysis did not confirm the survival advantage of invasive management ( $p=0.093$ ). At multivariable analysis, clinical and OHCA-related variables as well as CAG, but not PCI, were associated with outcomes.

#### **CONCLUSIONS:**

Comatose patients cooled after OHCA and submitted to emergency CAG or PCI are a favourable outcome population that receives optimal post-arrest care.