



Acute Coronary Syndromes

THE EFFECTS OF COLD INTRAVENOUS SALINE IN POST-CARDIAC ARREST PATIENTS TREATED WITH TARGET TEMPERATURE MANAGEMENT

Poster Contributions

Poster Hall B1

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Background: Recent data suggests that rapid infusion of intravenous (IV) cold saline for Targeted Temperature Management (TTM) after cardiac arrest is associated with higher rates of re-arrest, pulmonary edema and hypoxia, with no difference in neurologic outcomes or survival when administered by Emergency Medical Services. We sought to determine the effects of IV cold saline administration in the hospital setting on clinical parameters and neurologic outcomes.

Methods: A cohort of 132 patients who completed TTM after cardiac arrest (to 33°C) in a single institution was retrospectively studied. Patients who did not receive cold saline (n=66) were matched by age, gender, glasgow coma scale, downtime and presenting rhythm to patients who received cold saline. For each patient demographics, medical history, cardiac re-arrest, diuretic use, time to target temperature and Cerebral Performance Categories (CPC) scores were recorded amongst other variables. An independent T-test was performed comparing the two groups.

Results: Mean age of the population sampled was 64.0 ± 14.5 years; 50.8% of cardiac arrests were witnessed and CPR was administered by a bystander in 49.2%. Patients who received cold saline achieved target temperature sooner than those who did not (280 ± 176 min vs. 345 ± 200 min, $p = 0.05$). Patients who received cold saline had lower lactate levels on day 1 (4.2 ± 3.5 mmol/L vs. 6.0 ± 4.9 mmol/L, $p = 0.019$) and day 2 (1.3 ± 2.2 mmol/L vs. 2.2 ± 3.2 mmol/L, $p = 0.046$) and had increased incidence of pulmonary edema (51.5% vs. 31.8%, $p = 0.006$) and increased use of diuretics (63.6% vs. 42.4%, $p = 0.014$). There was no significant difference in cardiac re-arrest, pO₂ and CPC scores.

Conclusion: Rapid infusion of IV cold saline in the hospital setting administered in post-cardiac arrest patients in TTM results in shorter time to hypothermia. However, in our study it was associated with increased incidence of pulmonary edema and increased diuretic use. There was no difference in cardiac re-arrest, pO₂ or neurologic outcomes. These findings are in keeping with previous studies using IV cold saline for TTM and question the safety of this practice.