

Best Original Resuscitation Science, Moderated Poster Session

Abstract P51: Nasopharyngeal Cooling Improves Coronary Perfusion Pressure and Amplitude Spectrum Area During CPR in Comparison to Systemic Cold Saline Infusion in a Porcine Model of Prolonged Cardiac Arrest

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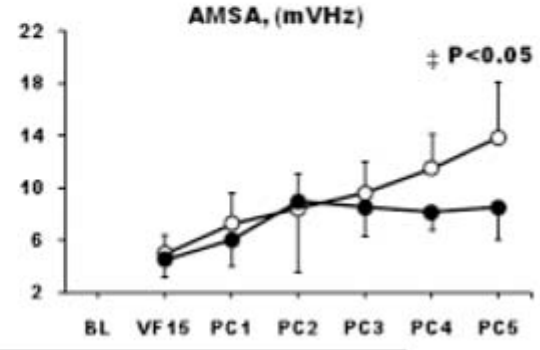
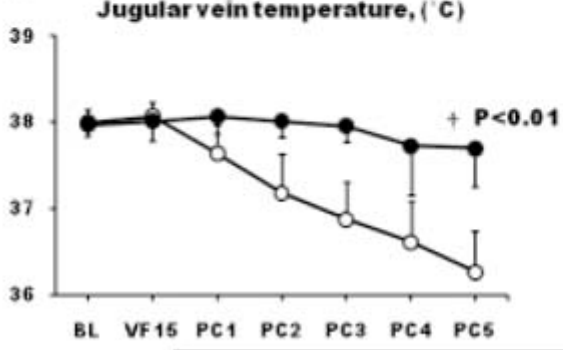
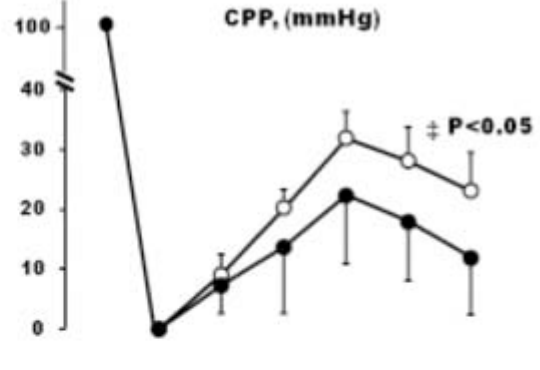
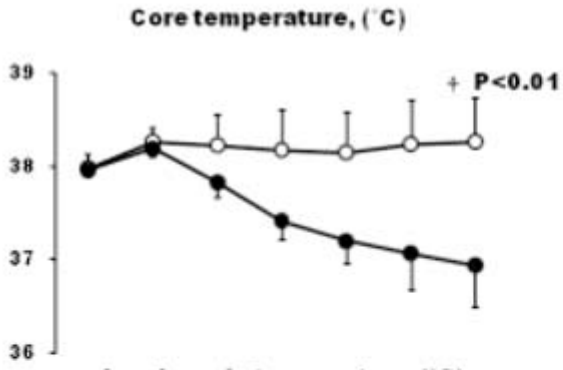
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Background We have previously demonstrated that nasopharyngeal cooling (NPC) initiated during CPR improves the success of resuscitation. In the present study, we compared the effects of NPC with cold saline infusion (CSI) on hemodynamics, amplitude spectrum area (AMSA) during CPR and ultimate resuscitation outcome in a porcine model of prolonged cardiac arrest. We hypothesized that NPC would yield better resuscitation outcome when compared to CSI when both were initiated during CPR.

Methods Ventricular fibrillation (VF) was induced in 14 pigs weighing 38 ± 2 kg. After 15 minutes of untreated VF, CPR was performed for 5 minutes prior to defibrillation. Coincident with the start of CPR, animals were randomized to receive NPC with the aid of the RhinoChill Device or CSI with 30 mL/kg 4°C saline. One hour after ROSC, surface cooling with the aid of a water blanket was begun in both groups and maintained at 35.4°C for 4 hours.

Results During CPR, jugular vein temperature was significantly decreased in animals subjected to NPC in comparison to those receiving CSI ($P < 0.01$). Core temperature, however, was decreased only in animals receiving CSI ($P < 0.01$). Coronary perfusion pressure was significantly greater in the animals treated with NPC ($P = 0.02$). AMSA values in NPC group was significantly higher than CSI group ($P = 0.03$). All 7 animals treated with NPC were successfully resuscitated in contrast to only 2 in the CSI group ($P = 0.02$).

Conclusion In this model, NPC improved hemodynamics and AMSA during CPR and this was associated with increases in the success of resuscitation.



○ Nasopharyngeal cooling ● Cold saline infusion