Survival and normal neurological outcome after CPR with periodic Gz acceleration and vasopressin.

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Background: We showed previously that whole body periodic acceleration along the spinal axis (pGz) is a novel method of cardiopulmonary resuscitation (CPR). The ultimate assessment of the value of any CPR technique is the neurological outcome after using such a technique. In this study, we determined the neurological outcome in pigs after prolonged pGz-CPR, with administration of vasopressin immediately prior to defibrillation. Neurological outcome after pGz-CPR was compared to a control group where no intervention occurred for the same time period (C-NoInterv). Methods and results: Ventricular Fibrillation (VFIB) was induced in 12 animals. After a 3 min non-interventional interval, the animals received either pGz-CPR (n=7), or C-NoInterv (n=5) for 15 min. After 18 min of VFIB, a single dose of vasopressin (0.8 U/kg) was administered along with sodium bicarbonate and bretylium, and defibrillation was attempted. All animals in the pGz-CPR group had return of spontaneous circulation (ROSC) and normal neurological assessment at 24 h. Neurologic outcome remained normal at 48 h. In contrast, none of the animals in the C-NoInterv had ROSC.

Conclusion: Prolonged pGz-CPR, with administration of vasopressin immediately prior to defibrillation results in normal neurological outcomes at 24 h.