

## **Cardiopulmonary resuscitation (CPR) using periodic acceleration (pGz) in an older porcine model of ventricular fibrillation.**

*Adams JA, Wu D, Bassuk J et al.*

*Resuscitation 2004; 60(3):327-334.*

Cardiopulmonary resuscitation (CPR) can be achieved by repetitive motion of the body headwards to footwards in the spinal axis, at 2 Hz and +/- 0.6 G in a juvenile pig model of ventricular fibrillation. Return of spontaneous circulation and normal neurological outcome occurred after a total of 22 min of ventricular fibrillation that included a 3-min noninterventional period [Resuscitation 56 (2003) 215; Resuscitation 51 (2001) 55]. Since older pigs have stiffer rib cages than juvenile pigs and their hemodynamic response to various stimuli might differ, this study was carried out to determine whether this method of CPR, termed pGz-CPR, was just as effective in older pigs. PGz-CPR was also compared to chest compression CPR using an automated mechanical device (CONV-CPR). Ventricular fibrillation was instituted in older pigs weighing 23-34 kg and a 3-min noninterventional period was observed, followed by 15 min pGz-CPR in eight pigs or 15 min CONV-CPR in eight pigs. Return of spontaneous circulation (ROSC) occurred after defibrillation in all eight pigs with pGz-CPR and in six of eight pigs with CONV-CPR. Two of eight pigs with CONV-CPR and none of the eight pigs with pGz-CPR had rib fractures. Hemodynamic instability 15 min after ROSC occurred in all animals with CONV-CPR whereas only three of eight pigs with pGz-CPR demonstrated hemodynamic instability ( $P < 0.05$ ). We conclude that pGz-CPR in older pigs produces similar ROSC reported by other investigators in pigs without the risk of rib fractures. Further, pGz-CPR is associated with a lower incidence of periods of hemodynamic instability following ROSC than CONV-CPR.