



## **GUIDELINE 11.3**

### **PRECORDIAL THUMP & FIST PACING**

#### **INTRODUCTION**

A precordial thump is a single sharp blow delivered by the rescuer's fist to the mid sternum of the victim's chest.

#### **RECOMMENDATIONS**

The precordial thump may be considered for patients with monitored, pulseless ventricular tachycardia if a defibrillator is not immediately available. [Class B; LOE IV]

The precordial thump is relatively ineffective for ventricular fibrillation, and it is no longer recommended for this rhythm.<sup>1</sup>

There is insufficient evidence to recommend for or against the use of the precordial thump for witnessed onset of asystole caused by AV-conduction disturbance.<sup>1</sup>

The precordial thump should not be used for unwitnessed cardiac arrest.<sup>1</sup>

A precordial thump should not be used in patients with a recent sternotomy (eg. for coronary artery grafts or valve replacement), or recent chest trauma.

#### **TECHNIQUE**

The clenched fist of the rescuer is held approximately 25-30cm (10-12 inches) above the sternum of the victim. The fist is then brought down sharply so the inside (medial, ulna) side of the fist makes contact with the mid-sternum of the victim's chest.

The precordial thump should not be taught as an isolated technique. It should be taught as part of an ALS course in which the student learns to identify life threatening arrhythmias and the appropriate steps to undertake if the chest thump fails. It is best taught with the skill of defibrillation.

#### **DISCUSSION**

In five prospective case series of out-of-hospital and two series of in-hospital VF cardiac arrest, healthcare provider administration of the precordial thump did not result in ROSC.

In three prospective case series of ventricular tachycardia in the electrophysiology lab administration of the precordial thump by experienced cardiologists was of limited use (1.3% ROSC). When events occurred outside of the electrophysiology lab, in 6 case series of in and out of the hospital VT the precordial thump was followed by ROSC in 19% of patients. Rhythm deterioration following precordial thump occurred in 3% of patients and was observed predominantly in patients with prolonged ischemia or digitalis-induced toxicity.

In three case series of asystolic arrest the precordial thump, but not fist-pacing, was sometimes successful in promoting ROSC when administered by health care providers to patients with witnessed asystole (some clearly p-wave asystolic arrest) for out-of-hospital cardiac arrest (OHCA) and in-hospital cardiac arrest (IHCA).<sup>1</sup>

Two case series and a case report documented the potential for complications from use of the precordial thump including sternal fracture, osteomyelitis, stroke, and rhythm deterioration in adults and children.<sup>1</sup>

### **PERCUSSION (FIST) PACING**

The administration of serial rhythmic blows to the chest has been proposed as a technique to provide mechanical pacing until an electrical pacemaker is available.

There is little evidence supporting fist or percussion pacing in cardiac arrest, particularly when the effect of the maneuver cannot be confirmed by continuous electrocardiographic monitoring and assessment of a pulse. Evidence consists of six single-patient case reports and a moderate sized case series with mixed asystole and bradycardia.<sup>1</sup>

### **Recommendation**

For patients in cardiac arrest, percussion (fist) pacing is not recommended.<sup>1</sup> However, percussion (fist) pacing may be considered in haemodynamically unstable bradyarrhythmias until an electrical pacemaker (transcutaneous or transvenous) is available.<sup>2</sup>

### **REFERENCES**

1. Koster RW, Sayre MR, Botha M, Cave DM, Cudnik MT, Handley AJ, et al. Part 5: Adult basic life support: 2010 International consensus on cardiopulmonary resuscitation and emergency cardiovascular care science with treatment recommendations. Resuscitation. [doi: DOI: 10.1016/j.resuscitation.2010.08.005]. 2010;81(1, Supplement 1):e48-e70.
2. Deakin CD, Morrison LJ, Morley PT, Callaway CW, Kerber RE, Kronick SL, et al. Part 8: Advanced life support: 2010 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science with Treatment Recommendations. Resuscitation. [doi: DOI: 10.1016/j.resuscitation.2010.08.027]. 2010;81(1, Supplement 1):e93-e174.