NEONATAL RESUSCITATION: EXTERNAL CARDIAC MASSAGE

Keywords: CPR, neonatal CPR, external cardiac massage, increase cardiac output, neonatal resuscitation, resuscitation of the newborn, neonatal heart rate less than 60 bpm, chest compressions

This guideline should be used in conjunction with the NCCU Clinical Guideline – Neonatal Resuscitation Program Algorithm. It is recommended that all staff who may be involved in neonatal resuscitation attend a Neonatal Resuscitation Programme course.

PURPOSE

- To increase cardiac output and maintain normal heart rate.

KEY POINTS

1. Chest compressions are indicated when the heart rate is less than 60 beats per minute despite assisted ventilation with supplementary oxygen for 30 seconds.
2. During resuscitation the compression rate is 90 per minute, and the breathing rate is 30 per minute. This equates to 120 “events” per minute. One cycle consisting of 3 heart compressions plus 1 ventilation takes 2 seconds.
3. Chest compressions should depress the lower half of the sternum approximately 1/3 of the chest anterior-posterior diameter.

PROCEDURE

TECHNIQUE OF EXTERNAL CARDIAC MASSAGE

There are two optional techniques used for performing external cardiac massage:

1. Thumb technique – two thumbs are used to depress the sternum, while the hands encircle the torso and the fingers support the spine. This method is less tiring, and is better at controlling the depth of the compressions. It is the preferred option.
2. 2 finger technique – the tips of the middle finger and either the index finger or ring finger of one hand are used to compress the sternum. If the neonate is not on a firm surface the other hand can be used to support the back. This may be more suitable if the neonate is large, or the person performing resuscitation has small hands.

POSITIONING OF THE THUMBS OR FINGERS DURING COMPRESSIONS

Pressure is applied to the lower third of the sternum, which lies between the xyphoid and a line drawn between the nipples.
DEPTH OF CARDIAC COMPRESSIONS

Enough pressure is used during a cardiac compression to depress the sternum to a depth of approximately one third of the anterior-posterior diameter of the chest. The pressure is then released to allow the heart to refill.

The tips of the fingers or thumbs should be in contact with the neonatal chest at all times during both compression and release.

Document the resuscitation including description of interventions and times on the WNHS Emergency Evaluation Report.

REFERENCES / STANDARDS

1. King Edward Memorial Hospital Neonatology Clinical Guidelines .Section 1. Resuscitation and Admission to NICU Resuscitation and Admission. 2013

National Standards –1.1.1, 9.1.2
Legislation - Nil

Related Policies –NCCU Clinical Guidelines Section1 Resuscitation and Admission to NICU
Neonatal Resuscitation
Who Attends the Birth

Other related documents – Nil

RESPONSIBILITY

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