GUIDELINE

Apnoea of Prematurity

Scope (Staff):	Nursing and Medical Staff
Scope (Area):	NICU KEMH, NICU PCH, NETS WA

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This document should be read in conjunction with this disclaimer

Aim

To provide guidance in the management and identification of infants at risk of apnoea of prematurity.

Risk

Delayed management and increasing the risk of premature infants to having apnoea and hypoxic episodes.

Definition

The absence of breathing in the premature infant for a period of >15 seconds often associated with bradycardia and/or desaturation.

Epidemiology

The incidence of apnoea of prematurity is inversely correlated with gestational age. Recurrent apnoea and bradycardia occur in most infants under 30 weeks gestation, in about 50% of infants at 30-32 weeks gestation, and only about 10% of those at 34-36 weeks gestation.

Apnoea of prematurity is primarily due to immaturity of the respiratory centre and control of the upper airway; most cases are due to a combination of central and obstructive apnoea.

It is important to manage the following additional factors which can either cause or accentuate apnoea:

- Systemic illness - sepsis, hypoxemia, shock.
- CNS – IVH, seizures, asphyxia, cerebral malformations.

- CVS conditions: e.g. PDA
- Anaemia
- Drugs - opiates, sedation.
- Post-general anaesthesia.
- Metabolic disturbances: hypoglycaemia, hypocalcaemia, inborn error of metabolism.
- Hypothermia, hyperthermia.
- Obstructive respiratory problems e.g. laryngo-tracheomalacia, macroglossia, micrognathia, choanal atresia
- Gastro-oesophageal reflux.

Management

- Address any underlying factor that may be aggravating apnoeic episodes. E.g. transfuse if very anaemic.
- Monitor infants with cardio-respiratory monitoring and oxygen saturation. Refer to Monitoring, Observation and Measurement Frequency.
- If an episode of apnoea/bradycardia does not resolve spontaneously, gentle tactile stimulation maybe required.
    - If response is slow or cyanosis present, then positive pressure ventilation via Neopuff may be needed.
- Prone positioning helps to stabilises the chest wall and may reduce the frequency of apnoea.
- Optimise respiratory support. CPAP improves oxygenation and reduces bradycardia. If available, non-invasive ventilation (NIPPV) may be required. Intubation and ventilation is sometimes required when the above fails.
- Caffeine is a potent respiratory and CNS stimulant and is the pharmacological agent of choice. It has been shown to decrease apnoea and reduce the need for ventilator support. It also reduces short term morbidities such as BPD and ROP. It is cost-effective and improves long term outcomes with lower rates of developmental co-ordination disorder. In general, caffeine levels are not routinely monitored.

Who to Treat

- Infants <30 weeks gestation are generally prescribed caffeine routinely. Caffeine has been shown to reduce post-extubation apnoea.
- Infants 30-34 weeks gestation are generally prescribed caffeine if they are symptomatic.

- Consider prescribing caffeine for a neonate in the immediate post-operative period following a general anaesthetic, or prior to immunisations in an ex-preterm neonate.

Stopping Caffeine

There are no trial data to support decisions to cease treatment. Apnoea of prematurity decreases with advancing age and can generally be expected to resolve by 37 weeks corrected gestational age (CGA). Apnoea which continues beyond this period is often multifactorial (see above).

- Caffeine can generally be ceased between 32- and 34-weeks' gestation, provided the baby has been stable. Some extremely preterm neonates will require treatment for longer. In such babies, as they approach later gestational age, they can be allowed to "grow out" of the caffeine dose.
- Once caffeine has been ceased , infants should remain monitored for a minimum of 5 days. Refer to Monitoring, Observation and Measurement Frequency.

This document can be made available in alternative formats on request.

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