

## APNOEA IN THE NEWBORN

### Definition

Pause in breathing lasting  $>15$  sec (term) or  $>20$ sec (preterm) during which the infant may develop cyanosis ( $SpO_2 < 80\%$ ) and bradycardia (heart rate  $< 100$  per min). In very immature infants, shorter duration of apnoea may produce bradycardia and cyanosis.

Types:

- **Central** : absence of respiratory effort with no gas flow
- **Obstructive**: continued ineffective respiratory effort with no gas flow
- **Mixed** central and obstructive

**Periodic breathing**: regular sequence of respiratory pauses of 10-20 sec interspersed with periods of hyperventilation (4-15 sec) and occurring at least 3x/ minute, not associated with cyanosis or bradycardia.

**Table 1. Aetiology**

Symptomatic of underlying problems, commoner ones of which are:

Respiratory conditions	Metabolic disorder
RDS, pulmonary haemorrhage, pneumothorax, upper airway obstruction, sedative drugs	hypoglycaemia, hyponatraemia, hypocalcaemia
Sepsis	Cardiac failure, congenital heart disease,
Hypoxaemia	Anaemia
Hypothermia	Aspiration, gastro-oesophageal reflux
Central nervous system abnormality	Necrotizing enterocolitis, abdomen distension
intraventricular haemorrhage, asphyxia, increased intracranial pressure, seizures	Vagal reflex
	nasogastric tube insertion, suctioning, feeding

### Recurrent apnoea of prematurity

Occurs  $> 3$  days of life with no underlying pathological condition. May occur earlier in ELBW infants. Most disappear by 34- 36 weeks, but may persist  $> 40$  weeks 'corrected' age.

### Management

- immediate resuscitation (Table 2)
- review possible causes (Table 1) and institute specific therapy i.e. septic workup if suspected sepsis and commence antibiotics Remember to check blood glucose via glucometer.
- prevent recurrence:
  - maintain a thermoneutral environment
  - nursing prone may reduce episodes of apnoea.
  - titrate the  $FiO_2$  to keep the  $PaO_2$  between 50 - 80 mmHg
  - monitoring: pulse oximeter, cardio-respiratory monitor
  - drug therapy: IV Aminophylline, oral Theophylline
  - if repeated attacks:
    - regular prophylactic tactile/surface stimulation
    - nasal CPAP (3 - 4 cm of H<sub>2</sub>O) or IPPV (usually low settings)

**Table 2. Immediate resuscitation**

