Respiratory Distress

Respiratory distress is an extremely common neonatal problem, with a limited number of common causes. The cornerstone of management is oxygen, not forgetting the other basics of warmth, food/glucose, and infection prevention/management.

Definition

Respiratory distress is marked by one or more of the following signs (listed in increasing severity):

- Respiratory rate > 60/minute (tachypnoea/fast breathing)
- Recession or indrawing of the chest
- Alar nasae flaring
- Grunting
- Cyanosis
- Irregular breathing, then apnoea

Assessment of severity

- **Mild:** Respiratory rate > 60/minute with minimal (< 30%) oxygen requirements
- **Moderate:** Respiratory rate > 60/minute, recession, flaring, cyanosis (requiring up to 60% oxygen)
- **Severe:** Respiratory rate > 60/minute, grunting, cyanosis (requiring > 60% oxygen), irregular respiration (progressing to apnoea)

If oxygen requirements go above 60%, baby may need ventilatory support.

Common causes

**Pulmonary causes**

- Hyaline membrane disease (HMD)
- Meconium aspiration syndrome
- Wet lung syndrome
- Pneumonia
- Pneumothorax

**Extrapulmonary causes**

- Congenital heart disease/heart failure
- Hypothermia
- Metabolic acidosis
- Anaemia and polycythaemia
- Diaphragmatic hernia
- Upper GIT anomalies (e.g. tracheoesophageal fistula)

Investigations

- Chest X-ray (wait 4-6 hours if hyaline membrane disease or transient tachypnoea of the newborn (TTN) are suspected)
- FBC, CRP and glucose
- Blood pressure
- Transilluminate the chest if a pneumothorax is suspected
- Gastric aspirate for a shake test and gram stain
- Monitor oxygen saturation and oxygen requirement using the “Oxygen Monitoring Sheet (Form Paed/18)”

Management

**Oxygen**

- Give enough oxygen to keep the oxygen saturation between 85 and 93%. If you do not have a pulse oximeter ensure that the baby’s tongue is pink. You MUST get one in your nursery FOR THE BABIES
- If it is not possible to keep the infant pink in oxygen then continuous positive pressure (CPAP) via nasal prongs or endotracheal tube should be given – discuss referral your patient
- Monitor oxygen saturation and oxygen requirement using the “Oxygen Monitoring Sheet (Form Paed/18)”

**Supportive Care**

- Keep the infant warm in an incubator
- If the respiratory distress is mild, do intermittent KMC provided that he/she maintains oxygen saturation (85-93%) on nasal cannula oxygen
- Keep nil per mouth for the first 24 hours
- Give appropriate volumes of neonatolyte
- Observe the RR, saturation, BP, HR hourly, and check the blood glucose 3 hourly

Criteria for referral

- If patient is not maintaining oxygen saturation despite 50% oxygen, or the baby develops apnoea, the baby should be referred to a hospital that has the ability to provide CPAP or IPPV
- PDA that does not respond to treatment
- Severe HMD – discuss early referral to a hospital that may have surfactant
- Possible cyanotic CHD, diaphragmatic hernia, tracheoesophageal fistula