

Protocol for Management of Acute Respiratory Distress

Developed by: Respiratory Medicine Sub-committee

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Acute Respiratory Distress
(Resp. Rate > 30/min, can't speak full sentence,
Prominent accessory muscles of respiration)

Quick assessment by history,
examination and investigation
(X-ray chest and ECG, if possible)

- Danger Signs:**
1. Cyanosis, exhaustion, Stridor
 2. Bradycardia/dysrhythmia
 3. Hypotension, confusion or coma
 4. Silent chest or feeble respiratory effort
 5. Peak expiratory flow < 33% of best-predicted
 6. O₂ saturation < 92% or PaO₂ < 8kPa
 7. Evidence of pneumothorax

Look for Danger signs & plan hospitalization if present

Water-seal drainage

Pneumothorax

Stridor ± Bovine cough

1. Inj. steroid and antibiotics
2. Consider tracheostomy

Wheeze, rhonchi ± prolonged expiration, H/O past Asthma or respiratory distress

Past H/O IHD, &/or CVD risk factors, Symptoms likely cardiac, Basal Creptitation

Past H/O Renal Failure, Poisoning, DM
No cough, No chest pain
Normal chest finding

Consider Severe Acute Asthma- Immediate Treatment with Oxygen Inj. steroid, Nebulization/Combined inhalers through spacer devices & Hospitalize

Consider Acute LVF- Immediate Treatment with Oxygen, Inj. Frusemide, Nitrates and ACE inhibitors /ARBs & Hospitalize

Consider metabolic acidosis, Hospitalize and follow appropriate flow- sheet or referral

Re-assessment of the patient clinically (if possible with Pulse Oximetry and PEFR) and admit or refer the patient

Case Definition:

Acute Respiratory distress can be defined as feeling of severe uncomfortable need to breathe arising over the course of 24 to 48 hours. Most consistent physical signs are- Respiratory rate >30/min, Inability to complete a sentence in a breathe, use of accessory muscles of respiration.

Table: Causes of Acute Breathlessness with Brief Clinical Clues:

Causes	Clinical Clues
Respiratory Causes Severe Acute asthma Acute exacerbation of COPD Pneumothorax Pneumonia Pulmonary embolus Acute respiratory distress syndrome Inhaled foreign body Chest Trauma	Hyperinflation, tachypnoea, wheeze Smoker, cough, wheeze, poor air entry Chest pain, tracheal deviation, hypotension Fever, cough, haemoptysis, chest pain Pleuritic chest pain, collapse, DVT, Other risk factors Multifactorial, esp. sepsis Afebrile, stridor, choking, especially in children Pain, Hypoxia, flail chest
Cardiovascular system Acute pulmonary oedema Acute myocardial infarction	Pink frothy sputum, upright posture, anxiety Central Chest pain, diaphoresis
Others Metabolic acidosis Psychogenic hyperventilation	Underlying cause, eg. Diabetes, Smell of Breath Past history, anxiety symptoms, circumoral and distal paraesthesia, tetany

Box-1: Common Investigations for patients with Acute Respiratory Distress

1. Pulse Oximetry
2. Electrocardiography
3. X-ray Chest PA View
4. Peak expiratory flow rate
5. S. Creatinine
6. RBS

Box-2: Treatment of Severe Acute Asthma

1. Mandatory Hospitalization
2. **Bronchodilator Therapy:** High-dose salbutamol and ipratropium bromide combination nebulization or through a Volumetric spacer device from metered dose inhalers
3. **Oxygen:** High concentration of oxygen (40-60% inspired O₂).
4. **Steroid Therapy:** Systemic steroids (Inj Hydrocortisone folloed by Prednisolone 40-60 mg daily)
5. **Repeated Doses of Bronchodilators:** Repeated doses of beta-agonist should be given at 15-30 minute intervals.

Box-3: Acute Exacerbation of COPD

1. Mandatory Hospitalization
2. **Oxygen therapy:** Target oxygen saturation of 88- 92%
3. **Antibiotics:** 2nd or 3rd generation cephalosporin, second generation macrolide or a fluoroquinolone
4. **Systemic corticosteroids:** Parenteral Hydrocortisone followed by oral Prednisolone
5. **Bronchodilators:** Sulbutamol and Ipratropium bromide combination through a metered dose inhaler with a spacer device or by nebulization repeatedly.
6. **Theophylline or Aminophylline** – not often required

Box-4: Acute Pulmonary Oedema

1. Mandatory Hospitalization
2. **Oxygen therapy:** Target oxygen saturation of 88- 92%
3. **Loop Diuretics:** Intravenous loop diuretics, especially furosemide
4. **Nitrates:** Intravenous or oral Nitroglycerine
5. **Morphine Sulphate:** Morphine sulfate (MS) as a standard preload-reducing medication.
6. **ACE Inhibitors or ARBs:** Angiotensin converting enzyme inhibitors (ACEIs) or Angiotensin-receptor blockers are effective.