**Respiratory Distress: Synopsis**

- Characterized by signs of increased work of breathing such as stridor, wheeze, tachypnea and retractions or an abnormal pattern of respirations

 -Attempt to improve minute ventilation in response to hypoxemia or hypercarbia

 -Disordered control of ventilation

 -Opioid overdose or head injury => respiratory depression

 -Metabolic acidosis, salicylate overdose, hyperammonemia => respiratory

 stimulation

-Initial assessment is rapid: quickly determine if patient needs emergent interventions

 -Rule out life-threatening conditions

 -Collect brief history initially and more detailed history once child is stabilized

 -Trauma

 -Change in voice

 -Onset and duration of symptoms

 -Associated symptoms

 -Exposures

 -Previous episodes of respiratory distress

 -Underlying medical conditions

 -Physical exam

 -General observation

-Mental status, position of comfort, nasal flaring, chest wall movement, abnormal sounds appreciated without auscultation, cyanosis, respiratory rate and pattern

 -Auscultation

-Wheezes, crackles, pleural rub, prolonged expiration, decreased breath sounds, transmitted upper airway sounds

Life Threatening Conditions

 -Complete or severe upper airway obstruction

 -Respiratory failure

 -Tension pneumothorax

 -Pulmonary embolism

 -Cardiac tamponade

Upper Airway Obstruction:

 -Croup

 -Symptoms: barking cough, stridor and retractions

 -Treatment:

 -Oxygen

 -NPO

 -Oral dexamethasone (if mild symtpoms)

-IM/IV dexamethasone (if moderate to severe symptoms)

-Nebulized racemic epinephrine with observation for at least 2 hours after treatment

 -Anaphylaxis

 -Symptoms: stridor or wheezing, hives or facial swelling, dizziness, vomiting or diarrhea

 -Treatment:

 -IM/IV epinephrine

 -Albuterol (if bronchospasm is present)

 - Treat hypotension

 -Diphenhydramine and H2 blocker

 -Give methylprednisolone

 -Retrophyaryngeal abscess

-Local pain, sore throat, difficulty swallowing

-Stridor and respiratory distress

-More common in infants and toddlers

 -Peritonsillar abscess

 -Local pain, difficulty swallowing and hoarse voice

 -More common in older children and adolescents

Lower Airway Obstruction

 - Assisted ventilation should be at a slow rate with adequate expiratory time

-Decreases risk of air trapping and complications with high airway pressure:

-Pneumothorax

 -Gastric distension, regurgitation and aspiration

Non-cardiogenic Pulmonary Edema: Acute Respiratory Distress Syndrome

 - ARDS Definition

 -Acute onset

 -PaO2/FiO2 <300 (regardless of PEEP)

 -Bilateral infiltrates on CXR

 -No evidence for a cardiogenic cause of pulmonary edema

 -Correction of hypoxemia is the most important respiratory parameter to be addressed

Cardiogenic Pulmonary Edema

-Causes include congestive heart failure, acute myocardial dysfunction, cardiac depressant drugs (tricyclic anti-depressants, verapamil)

 -Consider expert consultation

 -Diuretics may be helpful to reduce pre-load

Disordered Control of Breathing

-May be related to elevation of intracranial pressure or depressed level of consciousness due to CNS infection, seizures, metabolic disorders, poisoning or drug overdose

**Respiratory Distress Key References**

Ralston, M.et. al. *Pediatric Advanced Life Support Provider Manual.* 2006. American Heart Association.

Weiner, D. Emergent evaluation of acute respiratory distress in children. May 2010. *UpToDate.*