**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.*