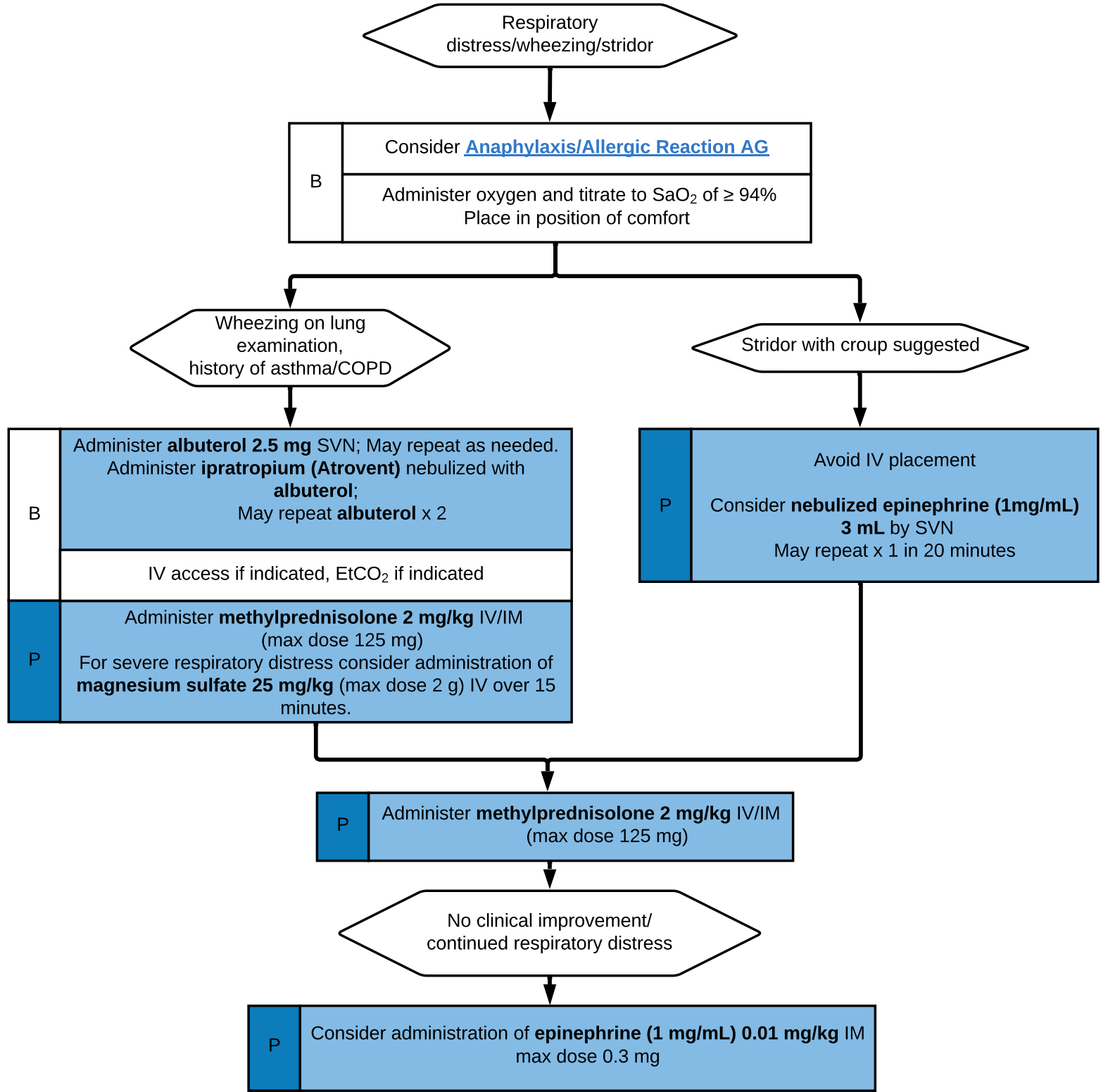




| History | Signs and Symptom | Differential |
|--|---|---|
| <ul style="list-style-type: none"> Asthma; COPD -- chronic bronchitis, emphysema, Congestive heart failure Home treatment (oxygen, nebulizer) Medications (theophylline, steroids, inhalers) Toxic exposure, smoke inhalation | <ul style="list-style-type: none"> Shortness of breath Decreased ability to speak Increased work of breathing/accessory muscle use Wheezing, rhonchi Fever, cough Tachycardia | <ul style="list-style-type: none"> Asthma Anaphylaxis Aspiration/inhaled foreign body Croup Pneumonia Pulmonary embolus Hyperventilation Inhaled toxin (i.e. carbon monoxide) |





Education/Pearls

Reactive airway disease is a common cause of respiratory distress in pediatric patients. Pediatric airways are smaller, and partial obstruction - depending on the location of it - causes wheezing and stridor. **Wheezing** is a whistling sound that results from air flowing through the lower airways, and can be caused by asthma, allergies, or other lung diseases. **Stridor** is a harsh, crowing, or vibratory sound of variable pitch that results from turbulent air flow caused by partial obstruction of the upper respiratory passages.

- Pulse oximetry and waveform capnography should be monitored continuously for any patient with respiratory distress.
- Epinephrine may be administered IM for suspected allergic reaction/anaphylaxis or impending respiratory failure related to asthma.

Croup is most common in children ages 6 and younger, and is the most common cause of inspiratory stridor in children. It affects about 60 of every 1,000 children between ages 1 and 2; occurrence drops significantly after age 6.

- When assessing a patient with croup, you may note hoarseness, coryza (acute rhinitis), pharyngeal erythema, and a slightly increased respiratory rate. When croup progresses to upper airway obstruction, the patient may have an increased respiratory rate, nasal flaring, and suprasternal, infrasternal, and intercostal retractions along with continuous stridor.

To aid assessment and diagnosis of croup, clinicians may use the number grades below:

- Grade 1 (*mild*): exertion causes dyspnea or stridor.
- Grade 2 (*moderate*): stridor is present at rest, and worsens with exertion.
- Grade 3 (*severe*): stridor and retractions of the sternal chest wall are present at rest.
- Grade 4 (*impending respiratory failure*): respiratory distress, irritability, pallor or cyanosis, tachycardia, and exhaustion are present at rest.

Audible without a stethoscope, stridor always warrants immediate attention because it may be the first sign of a serious or life-threatening process. Grade 3 and 4 croup is an emergency that necessitates immediate treatment. Your ability to promptly recognize croup and stridor can save a child's life.

In pediatric patients with sudden symptoms of wheezing or stridor, consider foreign body aspiration as a cause. Obtain history to clarify history of recent illness vs sudden onset of symptoms.

Epinephrine (using parenteral 1 mg/mL solution) Nebulization: Nebulize 3 mL of **1 mg/mL** solution, totaling 3 mg of epinephrine. May repeat x 1 in 20 minutes.