Pediatric Scenario – H1N1 Respiratory Failure, 6 y/o Little Steve Can’t Breathe

Objectives:

1. Recognize respiratory failure
2. Recognize shock
3. Send appropriate lab work
4. Manage respiratory failure with shock

Scenario: 6 y/o male with 1 day of cough, sore throat, fever and “not feeling well.” Yesterday had a fever 101, and so did not attend school. He has had decreased appetite, and has not been interested in drinking fluids. This afternoon, his mother noted that he has been struggling to breath, “gasping for air”, and so she brought him to the emergency room.

Past medical history notable for UTI at 2 months of age, occasional wheezing and cough treated with albuterol prn.

Medications: ibuprofen, acetaminophen, multivitamin with iron, albuterol prn.

Review of symptoms: mother reports fever, runny nose, cough, difficulty breathing, vomiting post cough

Physical exam:

T 39.2, P 135, BP 84/47, RR 48, SaO2 82%
Wt: 20 kg

General appearance: lethargic, cyanotic with significant respiratory distress

Respiratory: Airway is patent, marked nasal flare with intercostal retractions. Breath sounds are coarse with poor entry to the bases. Rales throughout.

Cardiovascular: Skin is cool and mottled. There is a 2/6 mid-systolic murmur at the upper sternal margins. The extremities are cool distally with rapid but faint pulses. Cap refill is 4 seconds.

Neurologic: The child is sleepy but opens eyes and moves extremities in response to verbal stimulus.

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<th>Time</th>
<th>Scenario Progression</th>
<th>Anticipated Actions</th>
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<tr>
<td>0 – 5 Minutes</td>
<td>Assessment</td>
<td>• Assess ABCs</td>
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<td>• Provide 100% oxygen via NRB – Sats improve to 86%</td>
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<td>• Place on monitor</td>
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<td>• Establish IV access – prefer 2 large bore PIV</td>
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<td>• NS bolus 20 cc/kg – should be administered over 5-10 minutes</td>
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<td>• Order labs: CBC with Diff, Lytes, Glucose, ABG, Blood cultures, viral respiratory panel, CXR</td>
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<td>• Consider antibiotics</td>
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<td>Time Interval</td>
<td>Event Description</td>
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| 5 – 10 Minutes | Progressive respiratory failure | - Recognize deterioration of respiratory status  
- Prepare for RSI  
  - Gather appropriate equipment  
  - Select drugs  
  - Check equipment  
- Intubate and confirm placement  
  - Auscultate  
  - End tidal CO2  
  - CXR  
- Evaluate response - Improved SaO2  
- Secure ETT |
| Lab results: | Blood glucose – 132 mg/dl  
ABG – 7.20/62/59/19.8/-4.9 |
| 10 – 14 Minutes | Continued hypotension | - Recognize no improvement with initial NS bolus  
- Repeat NS bolus x 2 rounds  
- Consider catecholamine support – Dopamine 5 mcg/kg/min |
| Patient’s BP improves to low normal range after 3rd bolus. |
| 15 Minutes | Stabilization and arrange transfer | - Arrange for transport to PICU  
- Follow up pending labs  
- Oseltamivir if not yet ordered |
| Additional lab results | CBC: WBC 6.5 (79% PMN, 11% lymphs, 12% eos), Hct 31, Plts 259  
Lytes: Na 141, K 4.3, Cl 109, Bicarb 19, BUN 5, Cr .4 |