H1N1 Background

The viral strain is a combination of two viruses, one human and one avian strain of influenza. The concerning factor of the 2008-2010 pandemic was the high infection rate for people under 25 years old. In addition, while many cases included people with some underlying and/or pre-existing health conditions, a third of hospitalized patients had no pre-existing chronic illnesses. However, common risk factors for complications from the H1N1 virus include chronic lung disease, immunosuppressive conditions, pregnancy, and asthma to name a few.

Signs and Symptoms

- Mild/Uncomplicated Disease: fever, cough, sore throat, anorexia (runny nose), muscle pain, headache, chills, nausea, and sometimes diarrhoea and vomiting but no shortness of breath (SOB) or development of chronic health conditions.
- Progressive Illness: Includes the symptoms above in addition to chest pain, poor oxygenation, cardiopulmonary insufficiency, central nervous system (CNS) impairment (confusion), severe dehydration, exacerbation of chronic conditions (i.e. asthma, COPD, CKF, DM etc). This usually requires mechanical ventilation.
- Severe/Complicated Illness: Signs of lower respiratory disease (dyspnoea or intubation); CNS findings; complications of hypotension (i.e. decreased blood pressure); secondary bacterial infection (i.e. persistent high fever)

Meet the Patient

- 42 yo Female from southwestern Washington
- Prior to admission reported PT, PMH, and DHx:
  - Pt: Parent and dog
  - Smokes 1 ppd x 2 years
  - Drinks 2 drinks per day (h/o heavy drinking)
- Presenting complaints: decreasing level of consciousness and hypothermia
- Past medical history: 3 episodes of bronchitis before 2001 (1 accompanied by pleurisy)
- Presenting symptoms: decreased level of consciousness, hypothermia
- PMH: 3 episodes of bronchitis before 2001 (1 accompanied by pleurisy)
- Social history: she was very motivated and was an active participant in learning about healthy protein rich foods for healing.

Admission Information

- Arrived at OSH after 1 week of fatigue, malaise, nausea, poor intake
- Transferred to IHCC on 4/17 with suspected pneumonia (PNA) and hypoxia. Existing comorbidities include working as mechanic & recently married dying birth 1 week prior to admit
- H1N1 influenza A/H3N2 (confirmed by pharyngeal swab)
- Initial Assessment

- PRK: Headache, sore throat, myalgias
- Height: 5’1” (154 cm)
- BMI (Admit BW): 26.5 kg/m^2
- Estimated Energy Needs (BEE x 1.2)
- Estimated Protein Needs (BEE x 1.25 g/kg)
- Prescribed Formula: Jazzly 1.2 @ 70 mL/d
- Initial Assessment

- Admission

- 2100 kcal & 95g protein
- Initial Assessment

- Admit Weight: 73 kg
- Usual Body Weight: 65-68 kg
- Height: 5’5” (166 cm)
- BMI (Admit BW): 26.5 kg/m^2
- Estimated Energy Needs (BEE x 1.2)
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- Initial Assessment

Timeline of Events

1. Admit (4/17)
   - Imbibed and Sated
   - Decreased blood pressures – pressure started
2. Day 2
   - Paralytics added
   - Infectious Disease consult for possible PNA
   - Takotsubo heart failure, ARDS, AKI
   - First discussion of Nutrition
3. Day 3
   - Plan to stop paralytics
   - NG tube feedings start
4. Day 4
   - TF held for “high residuals” (210 mL)
5. Day 5
   - Reglan added PPN
   - Residuals > 300 mL – TF held
6. Day 11
   - High risk patient that cannot be nursed without dropping blood pressure so she cannot be taken to IR for NG tube placement

Barriers to Nutrition

- Controversy around pressors and feeding
- Insufficient research for long term (≥6 days) use of paralytics – the majority of studies use to use over 2 days
- Some dietitians feel that in practice there is little success with maintaining low residuals and placing a tube post-pyloric with paralytics despite research denoting effects on smooth muscles
- Overall, minimal studies looking at nutrition support on paralytics

Paralytics and Feeding

- Critical illness patients who deteriorate and need [of …therapeutic neumuscular blockade should probably have their enteral nutrition held until they have been stabilized.
- “Critical illness patients who deteriorate and need …therapeutic neumuscular blockade should probably have their enteral nutrition held until they have been stabilized.”
- Some study relevant to this patient:

References


Meet the Patient

H1N1 Gone Awry: A Case Study

**Charlotte Neilson, Masters of Science, Nutritional Sciences, University of Washington**

Preceptors: Molly Clark MS, RD, CD & Susan McBride MS, RD, CD, Harborview Medical Center

Initial Assessment

- PRK: Headache of no etiology related to high residuals and multiple interrupted intakes as evidenced by patient consistently receiving <75% of estimated energy needs

Admit Information

- Present at OSH after 1 week of fatigue, malaise, nausea, poor intake
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- PMH: 3 episodes of bronchitis before 2001 (1 accompanied by pleurisy)
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