Pneumocystis jirovecii pneumonia prophylaxis in neurosurgical patients

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None to disclose
Introduction

*Pneumocystis jirovecii* pneumonia (PJP)
- Opportunistic interstitial fungal pneumonia

Incidence
- Decreasing in HIV-positive populations
- Increasing in HIV-negative immunocompromised populations
  - Ex: neurosurgical patients on high-dose corticosteroids

Severe morbidity and mortality (30 - 60% in non-HIV patients)
- Acute respiratory failure

Methods

Case presentation
- Two neurosurgical patients presenting with PJP

Review of the literature

Updated recommendations
Patient 1: 31 year-old male

- History of posterior fossa grade 4 medulloblastoma
- **Dexamethasone during adjuvant craniospinal radiation**
  - **Ongoing prescription**
- 3 months postoperatively presented with dry cough and sepsis
- PAD 2 required intubation for persistent hypoxemia
- Bronchoalveolar lavage (BAL) positive for **PJP**
- Deteriorated in spite of maximal therapy, passed away
Patient 1

- Diffuse, bilateral, nodular parenchymal opacities
Patient 2: 50-year-old female

- History of supraclinoid internal carotid artery aneurysm managed with endovascular proximal occlusion
- 2 months post-procedure presented with general malaise
  - 3 days following the end of the dexamethasone taper
- Progressive hypoxia required intubation
- BAL positive for PJP
- Improved quickly on ventilatory support, Sulfamethoxazole/trimethoprim (septra) and prednisone
- Extubated and discharged home
Patient 2

- Diffuse, bilateral, patchy infiltrates
- Predominant perihilar distribution
Discussion

Risk factors for PJP infection in HIV-negative patients:

● Long-term, high-dose corticosteroid regimens
  ○ ≥4 mg dexamethasone daily for ≥4 weeks
  ○ Taper
● CNS malignancy
● Concurrent radiation

Prophylaxis:

● Septra, 3 times per week
● Continue for 6 weeks following taper
Summary Points

Clinicians should maintain a high index of suspicion

System based approach

Standardized protocol for PJP prophylaxis in neurosurgical patients treated with high-dose corticosteroids

- Ex: clinical pathway, computerized order set