Poster ID 1877: Intravenous Drug Use-Associated Spinal Epidural Abscesses Are Characterized By Higher Rates Of Drug-Resistant Organisms And Loss-To-Follow-Up

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Disclosure

• I (HFF) DO have financial or organizational relationships with commercial interests or other entities which I will disclose below.
  
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Introduction

• Spinal epidural abscess (SEA) is a relatively infrequent but potentially devastating infection of the spine

• Estimated incidence 1.8 per 100,000 persons per year\(^1\)

• Risk factors include diabetes, immunosuppression (HIV, transplant, cancer history), intravenous drug use\(^2\)

• In 2017, Ohio had 2\(^{nd}\) highest rate of drug overdose death involving opioids in USA

• Data regarding trends in spinal epidural abscess patients with a history of intravenous drug use (IVDU) remains sparse

Methods

• Retrospective review of patients treated for spinal epidural abscess at the Ohio State University for 7 consecutive years between 2011-2017 and compare patients with history of IVDU to patients without IVDU history

• To provide epidemiology data, risk factors, and clinical features in SEA patients

Data collected:

• Age
• Sex
• Race
• Year of admission
• Length of stay
• Insurance
• Employment
• IVDU history
• Abscess location
• Abscess length
• biopsy/blood/surgery cultures
• CRP/ESR/WBC
• Temperature
• Surgery/fusion
• Neurologic deficit
• Follow-up
• Endocarditis
• Diabetes
• Smoker
• HIV
• Hepatitis
• Chemotherapy history
• Transplant history
• Chronic pain history
Results: Characteristics of SEA patients

- 324 patients total
  - 99 patients with IVDU history, 225 patients without IVDU history
- Average age
  - Non IVDU = 60 years
  - IVDU = 45 years
- Sex
  - 55% male, 45% female
- Race
  - 86% Caucasian, 12% African American, 2% Other
- Comorbidities
  - 35% SEA patients diabetic, 8% undergoing chemo, 1.2% transplant history, 1% HIV history
- Location of abscess
  - 22% involved cervical segments, 45% thoracic, 51% lumbar
- Length of abscess
  - 48% involve 1-2 vertebral levels, 34% involve 3-5 levels, 18% involve 6+ levels
- Neurologic deficit
  - 29% of patients presented with neurologic deficit
• Number of SEA admitted to OSU with a history of IV drug use has increased over the years

• 2015 – Ohio approved pharmacists to dispense naloxone without a prescription to general public

• 2016-2017, Ohio approved 500,000$ dollars to be used to purchase naloxone for law enforcement and first responders through local health departments
Types of infections in IVDU vs non-IVDU patients

- IVDU patients had statistically significantly higher rates of MRSA infections versus non-IVDU patients
  - 14% of non-IVDU patients
  - 28.3% of IVDU patients
- IVDU also had statistically significant higher rates of pseudomonas and fungal infections
  - Pseudomonas: 0.4% non-IVDU vs 4% IVDU
  - Fungal: 0% non-IVDU vs 5% IVDU

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Follow-up for SEA patients

- 40% of patients with IVDU history were lost to follow-up, versus 25% of patients without IVDU history
Discussion

• Failure rates for IVDU patients:
  • 60% (59/99) of IVDU patients had data regarding treatment failure
  • 27% of these patients (16/59) failed initial treatment (including progression of abscess or associated osteomyelitis, increased kyphosis, failure of hardware)

• Currently undertaking multivariate analysis evaluating admission clinical and radiographic factors that can predict failure in these subset of patients
  • Degree of kyphosis
  • Osteoporosis
  • Type of bacteria
  • Location of abscess
  • Size of abscess
  • Crossing junction
Summary

- Incidence of SEA in IVDU patients has increased at our institution

- IVDU patients are a unique subset of SEA patients with distinct demographics

- IVDU patients may be more difficult to treat due to higher incidence of drug resistant bacteria and poor follow-up rates

- This study will allow for further evaluation of admission clinical and radiographic factors that can predict treatment failure in patients with IVDU-associated SEA

49 y/o F with leg weakness and thoracic epidural abscess

1 year postop thoracic laminectomy and abscess evacuation, progressive back pain