

### Eleven-year Retrospective Review of the Anatomy and Microbiology of Musculoskeletal **Infections in Persons Who Inject Drugs**

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#### Introduction

In recent years, the infectious diseases service at our academic medical center noted an increase in the number of persons admitted with musculoskeletal infections related to injection drug use. Infections in people who inject drugs (PWID) are often due to commensal, Gram positive flora. A smaller proportion of infections may be due to Gram negative organisms or have a fungal etiology. The objective of our study was to determine the number of infections and describe the anatomic location and microbiology of musculoskeletal infections (MSKI) in PWID over the previous decade.

### **Methods**

This is a single center, eleven-year case series review of adult patients admitted with infection of the musculoskeletal system in the setting of injection drug use(IDU). ICD-9 and ICD-10 codes for musculoskeletal infection and diagnosis codes related to IDU were used to identify the cohort. Age, sex, ethnicity, race, comorbidities, date of admission for infection, location of infection, microbial etiology, and method of treatment were all recorded.









### **Results**

- A total of 849 individual medical records were identified by our search.
- 86 episodes of infection were found in 82 patients.
- The axial skeleton was involved in 63% and the appendicular skeleton in 28% of infections.
- Vertebral osteomyelitis was the most frequent occurrence of MSKI and the lumbar spine was the most frequent level.
- Gram positive infections predominated overall and Staphylococcus aureus was the most frequent organism.
- Pseudomonas aeruginosa was the most common gram-negative organism.
- Other gram-negatives identified included Serratia marcesens and Enterobacter cloacae.
- Soft tissue infection(STI) alone was found in 9% and occurred in the form of abscesses, primarily in the neck and the upper extremities.
- STI were all polymicrobial.

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## **Conclusions**

- In PWID, a significant increase in MSKI occurred over the period studied.
- MSKI in PWID are found in relatively young patients with few comorbidities.
- The axial skeleton is the most common site of infection.
- Staph. aureus is the most frequently isolated organism followed by Pseudomonas aeruginosa.
- Treatment may include surgical management but all require extended courses of antimicrobials.





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