

SCCEP 2013 LLSA Course Article 4

How Common is MRSA in Adult Septic Arthritis?

Frazee BW, et al. Ann Emerg Med. Oct 2009;54(5)695-700.

Article: Cross-sectional retrospective review of joint cultures sent to the lab from 2 EDs, for positive cultures considered to represent "true" septic arthritis, medical records were reviewed and presenting features abstracted and statistically described. **Conflicts: None reported**

Introduction:

1. Clinical exam is unreliable in ruling out Septic Arthritis, a cause of joint/cartilage destruction and high mortality among patients admitted for the disease
2. Synovial WBC counts generally correlate with likelihood of bacterial infection, but not always
3. Synovial fluid culture is considered the diagnostic standard
4. *Staph Aureus* is most common joint pathogen
5. Admission decision and ABX choice based on overall clinical picture

Goals:

1. **Primary: Determine MRSA prevalence in septic arthritis pts presenting to ED**
2. Secondary: Describe clinical features of Adult MRSA septic arthritis

Materials & Methods:

1. Cross-sectional retrospective chart review study
2. 2 academic EDs in Northern California, one tertiary care, one public
3. Micro Lab computer queried for synovial fluid analysis from 4/06-7/07

Inclusion/Exclusion Criteria:

1. Inclusion: ED Cultures that grew any bacteria
2. Not Eligible: Cultures deemed as contaminants after review of medical record

Measurement and Outcome Measures:

1. **1° Outcome: MRSA + Cultures**
2. **2° Outcome: Synovial fluid analysis and ABX susceptibility of MRSA isolates**

Results: Primary Outcome:

1. 109 joint aspirate cultures sent from ED
2. **23 grew Bacteria**
 - a. 14 True Positives, 9 considered contaminants based on chart review
 - b. Of 14, 1 from bursae and one from abscess, leaving 12 true positives
 - c. **6 MRSA, 4 MSSA** (one of these also grew *E. Feacalis*), 1 *Strept*, 1 *psuedomonas*

Results: Secondary Outcomes:

	Mean Synovial WBC	IVDA %	Febrile%
MRSA (n=6)	15,184	33%	33%
Non-MRSA (n=6)	84,700	66%	0%

Other Secondary Outcome Chart Data:

1. 5/6 MRSA admitted on appropriate ABX, 1 sent home on no ABX and called back
2. All MRSA susceptible to Vanc, Doxycycline and Trimeth/Sulfa, 5 sent to Clinda

Limitations:

1. Young population with high IVDA use, no prosthetic joints in study population
2. Methodology would have missed all culture-negative SA, a "fairly common" entity

Discussion:

1. *S Aureus* is the most common cause of adult SA, with *gonococcus* becoming rarer
2. MRSA has been considered rare cause of SA, with one UK study showing 6-8% MRSA
3. In one Massachusetts hospital, **15/59 SA were MRSA with mean age of 69**
4. **Synovial WBC counts on the MRSA + Pts were remarkably low. None of these patients were known to be immunosuppressed or on antibiotics.**