Septic Arthritis in Intravenous Drug Abusers: A Historical Comparison

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Abstract

Introduction: Intravenous drug abuse (IVDA) is a common problem worldwide with more than 16 million users reported in 2008. Infectious skeletal complications, including septic arthritis, are a common sequela. Reports on the microbiology of septic arthritis in the literature have varied over time. Our purpose is to determine the most common bacteria in septic arthritis and to compare the causative organisms in IV drug abusers who presented to our hospital in the early 1980’s vs. 2000’s.

Methods: An IRB approved retrospective cohort study compared IVDA patients who presented to the orthopedic service at Detroit Receiving Hospital over a 10 year period 1999-2008 (group A) with an IVDA Septic Arthritis database that was collected in the early 1980’s (group B). Fisher’s exact test and SAS 9.3 software were used to analyze these data sets. Endpoints were 1)bacterial species and 2) Staph species antibiotic susceptibility.

Results: Fifty-eight IVDA patients with a median age of 46.5, 35 males and 23 females made up group A. Group B included 38 patients with 30 males and 8 females of median age 32.5. We found the sets to be significantly different in pathogen proportions using Fisher’s exact test p=.0443. The most common organisms were Staph species (A 74.51%, B 52.63%), followed by Strep (A 7.84% B 31.58%), Pseudomonas (A 13.73%, B 13.16%), and Serratia (A 3.92% B 2.63%). Of the Staph species in group A, methicillin-resistant Staphylococcus aureus (MRSA) made up 56% vs. methicillin-sensitive Staphylococcus aureus (MSSA) 44%. In group B MRSA made up 65% vs. MSSA 35%. Strep species made up 7.84% of group A vs. 31.58% group B while Pseudomonas and Serratia were similar.

Conclusions: Methicillin-resistant Staphylococcus aureus is the most common organism in both cohorts and has increased in incidence in the current cohort. MSSA is more common in the current cohort than in the historical group. Strep species are much less prevalent in the current group than in the early 1980’s. This is most likely due to the type of drug injected which has changed from Tripelanamine and Pentazocine (T’s and blues) to Heroine. The increase in MRSA is most likely due to the use of antibiotics by the abusers, from being included in the injected drug by drug dealers and from IV antibiotics from hospitalization.

<table>
<thead>
<tr>
<th>Pathogens among IV drug abusers</th>
<th>MRSA</th>
<th>MSSA</th>
<th>Strep</th>
<th>Pseudo</th>
<th>Serratia</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present (Group A)</td>
<td>20 (39.22)</td>
<td>18 (35.29)</td>
<td>4 (7.84)</td>
<td>7 (13.73)</td>
<td>2 (3.92)</td>
<td>51</td>
</tr>
<tr>
<td>C&amp;N 1986 (Group B)</td>
<td>13 (34.21)</td>
<td>7 (18.42)</td>
<td>12 (31.58)</td>
<td>5 (13.16)</td>
<td>1 (2.63)</td>
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<tr>
<td>Total</td>
<td>33 (37.08)</td>
<td>25 (28.09)</td>
<td>16 (17.98)</td>
<td>12 (13.48)</td>
<td>3 (3.37)</td>
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### Fisher's Exact Test

<table>
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<tr>
<th>Table Probability (P)</th>
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<td>Pr &lt;= P</td>
<td>0.0443</td>
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### References
