The evaluation of the empiric antibiotic protocol for neutropenic fever in pediatric patients at SSM Cardinal Glennon Medical Center

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Methods

Data collection and analysis

Methods

- Febrile neutropenia is a common adverse effect for patients undergoing chemotherapy or other myelosuppressive immunotherapies
- Only 10 – 30% of neutropenic fevers stem from identifiable microbiologic causes (mostly gram-positive in etiology)\(^1\)
- Guidelines suggest an antipseudomonal β-lactam, a fourth-generation cephalosporin, or a carbapenem\(^2\)
- Cardinal Glennon protocol uses ceftazidime
- Antimicrobial Stewardship is important for addressing antibiotic misuse and slowing resistance

Introduction

Survey

6 questions survey focused on empiric antibiotic protocol for febrile neutropenia at respondents’ institutions

Results

Survey

Survey of 6 questions

Table 1. List and quantity of identified organisms for included cultures

<table>
<thead>
<tr>
<th>Gram Positive</th>
<th>Number of Isolated Cultures</th>
</tr>
</thead>
<tbody>
<tr>
<td>KLEBSIELLA PNEUMONIAE</td>
<td>16</td>
</tr>
<tr>
<td>ENTEROBACTER CLONAE COMPLEX</td>
<td>7</td>
</tr>
<tr>
<td>STAPHYLOCOCCUS EPIDERMIOS</td>
<td>37</td>
</tr>
<tr>
<td>STREPTOCOCCUS MITIS/ORALIS</td>
<td>21</td>
</tr>
</tbody>
</table>

Discussion

- Empiric antibiotic choice relies on local resistance patterns. As of 2020, local ESBL E.Coli and K. pneumoniae prevalence were 4 and 5% respectively.
- Coverage is required for both gram-positive and gram-negative organisms despite the concerns for aggressive gram-negative infections in immunocompromised patients.
- Cost is similar in comparison for the typical anti-pseudomonal agents listed in guidelines.
- Evaluation limitations include lack of clinical presentation information as well as the inability to compare interinstitutional antibiograms.
- Patients may benefit from monotherapy with cefepime due to increased coverage with less risk for adverse events.

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References