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Observed incidence of linezolid-associated serotonin syndrome during concomitant serotonergic therapy

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Observed incidence of linezolid-associated serotonin syndrome during concomitant serotonergic therapy

**Disciplines**
Pharmacy and Pharmaceutical Sciences

**Comments**
Poster presented at Faculty Scholarship Celebration, St. John Fisher College, October 25, 2012.

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INTRODUCTION

• While confirmed cases of serotonin syndrome (SS) have been associated with linezolid, the incidence in patients receiving linezolid in combination with other serotonergic medications has not been well established
• Incidence in published retrospective studies ranges from 0.54% to 4.17%
• The Hunter Serotonin Toxicity Criteria (HSTC) are the most widely accepted criteria used to diagnosis SS

OBJECTIVE

Prospectively determine the incidence of SS in hospitalized patients receiving linezolid and concomitant serotonergic therapy

METHODS

• IRB-approved prospective analysis
• Inclusion criteria: ≥ 18 years of age, receipt of linezolid between March 1, 2012 and June 15, 2012
• Exclusion criteria: none
• Primary outcome: development of SS, by definitive diagnosis via the primary patient care team or by satisfying the HSTC
• Concomitant serotonergic therapy was defined as any agent known to affect serotonin activity
• A CPDE-based report of active linezolid orders was generated daily to capture patients for inclusion
• Electronic health records (EHR) of included patients were assessed for signs and symptoms of SS daily until development of SS or hospital discharge
• If documentation in the EHR suggested possible SS, the primary patient care team was contacted to confirm

RESULTS

• 130 unique courses of linezolid were received by 121 unique patients
• 37 (28.5%) were in patients who received concomitant serotonergic therapy

Table 1. Demographic Information

<table>
<thead>
<tr>
<th></th>
<th>Median Age (IQR) [years]</th>
<th>Median Length of Stay (IQR) [days]</th>
<th>Median Duration of Linezolid Therapy (IQR) [hours]</th>
<th>Pulmonary Disease</th>
<th>Cardiovascular Disease</th>
<th>Seizure Disorder</th>
<th>Liver Disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concomitant SS</td>
<td>44 (50-75)</td>
<td>13 (7-19)</td>
<td>78 (44-167)</td>
<td>45.9%</td>
<td>27.0%</td>
<td>18.9%</td>
<td>2.7%</td>
</tr>
<tr>
<td>No SS</td>
<td>64 (50-75)</td>
<td>13 (7-19)</td>
<td>78 (44-167)</td>
<td>45.9%</td>
<td>27.0%</td>
<td>18.9%</td>
<td>2.7%</td>
</tr>
</tbody>
</table>

DISCUSSION

• The incidence of linezolid-associated SS in 37 patients receiving linezolid in combination with other known serotonergic agents at a large academic medical center was zero
• To our knowledge this is the first prospective study investigating the incidence of linezolid-associated SS
• Limitations
  • Single center
  • Short study period
  • Patients were not physically assessed daily by investigators

REFERENCES