SHORTAGE OF DRUGS ERA: IMPACT OF PIPERACILIN/TAZOBACTAM SHORTAGE

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**Background**

In Spain, in the last six months there has been a mean of 0.9 shortages per day. Foreign’s defined daily dose (DDD) cost 2 times more than the one of the national product.

Piperacillin/tazobactam shortage was announced at April 2018 by the Spanish Agency of Medicine and Health Products (AEMPS)

On the other hand, since April 2014, an Antimicrobial Stewardship Programme (ASP) has been implemented in hospitalization units (HU) of this hospital. One of this programme purposes is to work on rational use of carbapenems.

**Purpose**

The aim of this study is to analyze carbapenems exposure during piperacillin/tazobactam shortage in a tertiary care hospital.

**Material and methods**

Carbapenems exposure was measured by DDDs/100 bed-days three months before (April, May and June) and three months during the shortage (July, August and September), and furthermore expense variation was calculated. Carbapenems consumption, at HU and intensive care unit (ICU), was calculated.

**Results**

<table>
<thead>
<tr>
<th>Carbapenems</th>
<th>DDD (g)</th>
<th>Cost DDD (€)</th>
<th>DDDs/100 Bed-days HU before shortage</th>
<th>DDDs/100 Bed-days HU during shortage</th>
<th>DDDs/100 Bed-days ICU Before shortage</th>
<th>DDDs/100 Bed-days ICU during shortage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meropenem</td>
<td>2</td>
<td>12,5</td>
<td>2,96</td>
<td>7,48</td>
<td>7,72</td>
<td>16,87</td>
</tr>
<tr>
<td>Imipenem</td>
<td>2</td>
<td>12</td>
<td>1,77</td>
<td>2,18</td>
<td>0,75</td>
<td>1,69</td>
</tr>
<tr>
<td>Ertapenem</td>
<td>1</td>
<td>36</td>
<td>1,45</td>
<td>2,25</td>
<td>0</td>
<td>2,03</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6,18</strong></td>
<td><strong>11,9</strong></td>
<td><strong>8,47</strong></td>
<td><strong>20,59</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

During the shortage carbapenem DDDs/100 bed-days increased by 92% for HU and by 143% for ICU. These carbapenem DDDs/100 bed-days rise came with an additional cost of 5300€.

**Conclusion**

These data show the huge impact of piperacillin/tazobactam shortage in public health and economic resources. The management of shortages should be a public health priority for European health authorities. Also this situation makes difficult to get Antimicrobial Stewardship Programme purposes. Ecological impact must be evaluated after this excessive carbapenems use.