ANTIBIOTIC DESENSITIZATION IN PATIENTS WHO WERE PREVIOUSLY TREATED WITH POTENTIALLY ALLERGY-TRIGGERING MOLECULES

A. Rodriguez¹, S. Gomez-Zorrilla², D. Echeverria-Esnal¹, A. Albalat¹, M. de Antonio¹, O. Fernandez¹, S. Grau¹
¹Hospital del Mar (PSMar), Pharmacy, Barcelona, Spain. ²Hospital del Mar (PSMar), Infectious Diseases, Barcelona, Spain

Key words: antibiotic, desensitization, allergy

Abstract number: 5PSQ-015

BACKGROUND AND IMPORTANCE
Patients with antibiotic allergy label (AAL) are frequent in hospitals. AAL may lead to using alternative options that are less effective or safe and more expensive. Desensitization is a strategy to manage AAL patients but we noticed that several patients receive antibiotics with a similar molecule to the one that will be desensitized later.

Aim and objectives: To analyze the percentage of patients undergoing desensitization that were previously exposed to a molecule that potentially could cause them allergy prior to desensitization.

MATERIAL AND METHODS
Retrospective study in a tertiary-care 400-bed university hospital from 2015 to 2021. All patients undergoing antibiotic desensitization during this period are included. Demographic, clinical and microbiologic data are collected. Quantitative variables are presented by median and interquartile range (IQR). Univariate analysis by Chi-square test.

RESULTS
- 16 desensitization
- 14 patients
- Completed in 15 cases
- Antibiotic treatment duration 9 (0-50) days

Six (42.9%) were previously exposed to a similar molecule to the one that was desensitized later. We didn’t find significant difference with desensitization completion and mortality in exposed group.

<table>
<thead>
<tr>
<th>Patient</th>
<th>Similar prior antibiotic</th>
<th>Desensitized antibiotic</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Imipenem</td>
<td>Ceftolozane/Tazobactam</td>
</tr>
<tr>
<td>4</td>
<td>Meropenem</td>
<td>Ceftaroline</td>
</tr>
<tr>
<td>7</td>
<td>Ceftazidime</td>
<td>Cloxacillin</td>
</tr>
<tr>
<td>11</td>
<td>Penicillin G</td>
<td>Ceftriaxone</td>
</tr>
<tr>
<td>12</td>
<td>Imipenem</td>
<td>Ceftaroline</td>
</tr>
<tr>
<td>13</td>
<td>Cefotaxime</td>
<td>Ampicillin</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Patients</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Women, n</td>
<td>10</td>
</tr>
<tr>
<td>Age (years)</td>
<td>74 (58-83)</td>
</tr>
<tr>
<td>CHARLSON</td>
<td>6 (3-12)</td>
</tr>
<tr>
<td>quickSOFA</td>
<td>0.5 (0-2)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Infection source</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Endovascular</td>
<td>4</td>
</tr>
<tr>
<td>Pulmonary</td>
<td>4</td>
</tr>
<tr>
<td>Intra-abdominal</td>
<td>2</td>
</tr>
<tr>
<td>Skin and soft tissue</td>
<td>2</td>
</tr>
<tr>
<td>Others</td>
<td>4</td>
</tr>
<tr>
<td>Community-acquired</td>
<td>10</td>
</tr>
<tr>
<td>Nosocomial</td>
<td>6</td>
</tr>
<tr>
<td>Post-surgery</td>
<td>6</td>
</tr>
<tr>
<td>Bacteremia</td>
<td>10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Microbiologic data</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Enterobacterales</td>
<td>6</td>
</tr>
<tr>
<td>Staphylococcus spp</td>
<td>3</td>
</tr>
<tr>
<td>Pseudomonas aeruginosa</td>
<td>2</td>
</tr>
<tr>
<td>Streptococcus spp</td>
<td>2</td>
</tr>
<tr>
<td>Others</td>
<td>3</td>
</tr>
<tr>
<td>Polymicrobial</td>
<td>7</td>
</tr>
</tbody>
</table>

| Exposed Not-exposed p-value |
|-----------------------------|----------|
| Bacteremia, n               | 6        | 4        | 0.026 |
| Endovascular, n             | 3        | 1        | 0.053 |
| Staphylococcus spp, n       | 3        | 2        | 0.068 |
| Antibiotic treatment duration, median (days) | 12.5      | 7        | 0.053 |

CONCLUSION AND RELEVANCE
Despite the fact that desensitization strategy is not frequent, many of the patients have been previously treated with antibiotics that could have triggered an allergy with clinical consequences. The desensitization of beta-lactams in patients with bacteremia is especially interesting due to the severity of this pathology and the high activity of this family of antibiotics.