Successful desensitization to penicillin after diagnostic reassessment

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**SUMMARY**

Clinical situations for which penicillin is indicated as the sole effective treatment are not infrequent, in these circumstances penicillin allergy complicates their medical management. No proven alternatives to penicillin are available for treating neurosyphilis, congenital syphilis, or syphilis in pregnant women, it is not possible choosing an alternative non betalactam antibiotic. The management of the patient who has a history of penicillin allergy include skin testing to determine if penicillin-specific IgE antibodies exist, and desensitization if penicillin is the choice treatment. We report a case of successful desensitization to penicillin in a 30 year-old pregnant woman with latent syphilis and penicillin allergy, where the first penicillin study was not positive, but the repetition of diagnosis test (reassessment) with the same beta-lactam reagents than in the first study two weeks later the initial evaluation was positive, detecting allergic sensitization not detected at the previous examination.

**Key words:** Syphilis. Pregnancy. Penicillin allergy. Reassessment. Desensitization.

**INTRODUCTION**

The management of the patient who has a history of penicillin allergy include skin testing to determine if penicillin-specific IgE antibodies exist, and desensitization if penicillin is the choice treatment. Especially when no proven alternatives to penicillin are available...
for treating neurosyphilis, congenital syphilis, or syphilis in pregnant women and it is not possible choosing an alternative non betalactam antibiotic2.

We report a case of successful desensitization to penicillin in a pregnant woman with latent syphilis and penicillin allergy, where the first penicillin study was not positive, but the repetition of diagnosis test (reassessment) with the same betalactam reagents than in the first study two weeks later was positive, detecting allergic sensitization not detected previously.

CASE REPORT

We studied for a second time, a 30 year-old pregnant woman with latent syphilis (RPR positive, IgM ELISA positive and FTA Abs positive) and penicillin allergy. One year before was evaluated in our outpatient clinic because a history of immediate angioedema. One year before was evaluated in our outpatient clinic because a history of immediate angioedema. Upon negative skin tests and specific IgE results to Penicilloylpolylysine, Minor Determinant Mixture, and Ampicillin, but negative to Amoxicillin, Cefazolin and Cefotaxime. Specific IgE was again negative. By the second year all the tests were negative, including skin and serologic tests, challenge test and a new reassessment.

So therefore and after obtaining written, informed consent the patient was proposed to desensitization. Doses of 500, 5000 and 40000 IU of fenoximetilpenicillin was prepared. The specific amount of drug was diluted in 30 mL of water and administered orally with 15 minutes interval between doses, and elapsed time 4 hours and cumulative dose, 1.288.000 units. The patient was treated with 2.400.000 UI of Penicillin G i.v. every 4 hours during 10 days. The patient was admitted in ICU and monitorized during all the procedure, including the first two i.v. doses of penicillin. No reactions were observed during the desensitization protocol and treatment.

A follow up study was done one year later with new skin tests with the same reagents and positive results to Penicilloylpolylysine, Minor Determinant Mixture, and Ampicillin, but negative to Amoxicillin, Cefazolin and Cefotaxime. Specific IgE was again negative. By the second year all the tests were negative, including skin and serologic tests, challenge test and a new reassessment.

After oral controlled administration of penicillin in patients with skin tests and RAST negative, repetition of diagnostic tests (reassessment) with betalactam reagents two to four weeks after initial evaluation can be of value to detect allergic sensitization not detected at the previous examination3,5.

DISCUSSION

Detection of IgE antibodies in the skin or serum depend on the time interval between the reaction and the study, because skin test sensitivity decrease with time6. This loss of sensitivity varies individually, but no sufficient studies have been carried out to examine it. The reason for the variability in the skin test response may be genetic or environmental because uncontrolled or hidden contact with beta-

**Table I**

<table>
<thead>
<tr>
<th>Drugs</th>
<th>Concentrations (mg/ml)</th>
<th>Prick-test</th>
<th>Intradermal tests (1/100)</th>
<th>Intradermal tests (pure)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPL</td>
<td>0.035</td>
<td>Negative</td>
<td>7 × 5 mm</td>
<td></td>
</tr>
<tr>
<td>MDM</td>
<td>1.1</td>
<td>4 × 4 mm</td>
<td>6 × 6 mm</td>
<td></td>
</tr>
<tr>
<td>Ampicillin</td>
<td>20 mg/ml</td>
<td>Negative</td>
<td>7 × 5 mm</td>
<td></td>
</tr>
<tr>
<td>Amoxicillin</td>
<td>20 mg/ml</td>
<td>Negative</td>
<td>7 × 6 mm</td>
<td></td>
</tr>
<tr>
<td>Cefazolina</td>
<td>20 mg/ml</td>
<td>Negative</td>
<td>7 × 6 mm</td>
<td></td>
</tr>
<tr>
<td>Cefotaxime</td>
<td>20 mg/ml</td>
<td>Negative</td>
<td>6 × 4 mm</td>
<td></td>
</tr>
</tbody>
</table>

All skin test results are given as size of largest diameter of wheal and its perpendicular diameter minus control wheal diameters.
lactams antibiotics can occur, which could maintain sensitization.

Allergic diseases are unpredictable more, less severe, or unchanged in pregnant women. Little specific information is available concerning the relative susceptibility of pregnant women to anaphylaxis or acute desensitisation. This case demonstrates that in a patient allergic to penicillin, in whom there is a vital indication to administer this compound, the drug can be given safely after tolerance induction or desensitization.

REFERENCES


