MEDICAMENT ROLE IN THE ETIOLOGY OF ALLERGIC CONTACT SKIN ERUPTIONS

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ABSTRACT

The medicament skin eruptions are frequently observed in medical practice. They occur in various clinical types, defined into four groups: urticaria, maculo-papular eruptions, vasculitis and a non-homogeneous group - others. The allergic contact dermatitis and contact urticaria increase the range of the medicament skin reactions. They are provoked by locally applied antibiotics, anesthetics and non-steroid anti-inflammatory agents. The accurate clarification of the etiopathogenesis of the allergic contact eruptions provides adequate therapy and suitable prophylactic strategy for each case. The research covers 112 patients with allergic contact dermatitis and contact urticaria. The etiology has been clarified through anamnestic data, clinical study, skin tests/skin scraping, epicutaneous/. Of all the patients included in the research, 87 patients with allergic contact dermatitis and 12 with contact urticaria were etiologically clarified, whereas 13 patients remained with unclear etiology. The most frequent etiological causes for the allergic contact medicament skin eruptions proved to be local antibiotics /37.5%/d, followed by local non-steroid anti-inflammatory agents /30.7%/d, local anesthetics /26.9%/d and local corticosteroids /2.8%/d.

Keywords: medicament skin eruptions, allergic contact medicament dermatitis, medicament contact urticaria.

INTRODUCTION

The medicament skin eruptions are frequently observed in medical practice (25); they occur in various clinical types, and are defined in four groups - urticaria (27), maculo-papular eruptions, vasculitis and a non-homogeneous group - others (25). They usually disappear after treatment but they can also evolve into serious ailments such as erythema exudativum, Stiven-Johnson syndrome (28), caused by sulphonamides, cephalexil, cephalexil, quinolones (23). The most frequent causes for the slighter medicament skin reactions are antibiotics, antipyretics, analgetics, sulphonamides, psychotropic agents, as well as their metabolic decomposition products.

The range of the medicament skin eruptions is increased also by the allergic contact dermatitis (ACD) and contact urticaria (CU). They are also noted for their frequency and are caused by locally applied medicaments. It is the antibiotics that most often (19.5%) cause ACD (3.29) or CU, but it is also the local anesthetics and non-steroid anti-inflammatory agents (3, 20). The anti-bacterial, anti-nyctotic and non-steroid anti-inflammatory local agents also cause photosensitisation of the skin (10). The local medicaments can also cause graver clinical reactions as Erythrodermia (12).

There exists a sub-classification of the medicament reactions of the IV allergic type (19), which simplifies the clarification of the etiopathogenesis. When ACD is clinically clarified, epicutaneous tests and skin scraping (6) are applied, as well as oral provocative tests, but of greatest significance are the clinical and medical histories.

The present study aimed at etiological clarification of the allergic contact medicament eruptions from a group of 112 patients.

MATERIAL AND METHODS

The study covers 112 patients with clinical occurrences and medical histories of medicament sensitization, observed and studied for a period of two years in the Clinic of Dermatology and Venerology - Varna. The etiology of the indi-disposition was clarified in 89 of them: 73 patients had ACD and 6 patients - with CU. The clarification of each separate case included: a detailed medical history of the possible provocation of the clinical symptoms of the medicaments, a dynamic clinical observation and skin tests. Skin scraping tests were used with a number of medicaments, selected according to concrete data and covered epicutaneous tests with a standard line, as well as with additional lines in accordance with the medical history data.
RESULTS AND DISCUSSION

The distribution of the studied patients according to etiological diagnosis was the following (Table 1): ACD was diagnosed in 87 patients (77.6%), CU - in 12 patients (10.7%) and 13 patients (11.6%) remained etiologically unclear.

Table 1. Distribution of Patients with Allergic Contact Skin Eruptions according to medica-ment skin eruptions and pathogenic diagnoses

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Number of Patients</th>
<th>%</th>
<th>Patients with positive skin tests</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allergic Con-tact Dermatitis</td>
<td>87</td>
<td>77.6</td>
<td>87</td>
<td>87.8</td>
</tr>
<tr>
<td>Contact Urti-caria</td>
<td>12</td>
<td>10.7</td>
<td>12</td>
<td>12.2</td>
</tr>
<tr>
<td>Etiologically Unclear</td>
<td>13</td>
<td>11.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>112</td>
<td>100</td>
<td>99</td>
<td>100</td>
</tr>
</tbody>
</table>

The analysis of the 136 positive skin tests with local and general medicaments showed the following results (Table 2): it is the local antibiotics that are of greatest etiological importance with the medicament skin eruptions (37.5%). With some of the patients, general antibiotics are involved in the etiology (41.3%). Then follow the local non-steroid anti-inflammatory agents (30.7%) with a participation of their general sensitization in 17.2%. Considerable frequency was established of ACD cases caused by local anesthetics (26.9%), and in 41.3% of the patients was established their general effect. In a small number of the patients (2.8%) the etiological cause was the local corticosteroids and in 1.9% - other local agents (pilocarpin).

The established results for contact sensitization to local antibiotics correlate with the data in medical literature. It is revealed that the local antibiotics very frequently cause ACD, particularly neomycin (3.4), an average of 2 to 7.8% from the cases (24). This antibiotic has a high sensitization potential and is contained in various eye drops (22). A number of authors point out the possibility of a cross allergic reaction to other aminoglycosides as well (21) and the development of grave clinical pictures such as Erythromelobiosis (8). Other local antibiotics, causing ACD are: gentamycin (22), bacitracin (16), oxytetracyclin, framicotin (5). Described are cases of ACD caused by proflavine - a local antibiotic (9). A high frequency of allergy to neomycin is described with atopic patients (18).

When studying ACD caused by non-steroid anti-inflammatory agents a high frequency is observed. Similar data were reported by several authors who specify dextropropofen, piktropropofen, ketoprofen, diclofenac as the most frequent contact sensitizers (26). At the same these local agents have a photosensitization effect on the skin (10).

The application of local anesthetics hides a high risk of allergization, especially to procain, lidocain, dibucain.

Table 2. Etiology of the allergic contact medicament skin eruptions (136 positive skin tests)

<table>
<thead>
<tr>
<th>Allergens</th>
<th>Positive epicutaneous tests</th>
<th>%</th>
<th>Positive skin scraping</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local antibiotics</td>
<td>39</td>
<td>37.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General antibiotics</td>
<td></td>
<td></td>
<td>12</td>
<td>41.3</td>
</tr>
<tr>
<td>Local non-steroid Anti-inflamm.</td>
<td>32</td>
<td>30.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General non-ster. Anti-inflamm.</td>
<td></td>
<td>5</td>
<td></td>
<td>17.2</td>
</tr>
<tr>
<td>Local anesthetics</td>
<td>28</td>
<td>26.9</td>
<td>12</td>
<td>41.3</td>
</tr>
<tr>
<td>Local corticosteroids</td>
<td>3</td>
<td>2.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other medica-ments</td>
<td>2</td>
<td>1.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>107</td>
<td>78.1</td>
<td>29</td>
<td>21.8</td>
</tr>
</tbody>
</table>

These agents cause ACD in 2 - 4% (2), when applied as local anesthetics (15) or as ingredients of medicaments used for the treatment of dermatoses (20). They form a considerable part of ACD caused by local anesthetics. Of the patients with urticaria, who have become allergic to local anesthetics, four were with positive epicutaneous tests to paraphenylendiamin. This is explained with the cross allergic reaction between local anesthetics (especially procain, ben佐caic) and hair dyeing products (17).

The local corticosteroids are pointed out as medicaments with a sensitization potential, especially the non-halogenous (7). Their frequency as skin allergens is from 2 to 8% (29), as it is most often tixocortol and budesonid that cause ACD (7). The data in the study did not reveal a great number of ACD caused by local corticosteroids.

It has to be taken into account that the various additives to the local medicaments, especially the preservatives, can also provoke allergic contact reactions (3). Furthermore, a significant factor for the exacerbation of ACD is the skin occlusion (30).

In two patients with periorbitally expressed ACD positive skin tests with pilocarpin were received. Similar cases are described in medical literature with the treatment of glaucoma with various eye drops containing beta-blockers (14), sympathicomimetics (11), parasympathicomimetics (13) or dorsolamid (1).

CONCLUSIONS

The allergic contact skin reactions are frequent and they combine dermatitis and urticaria reactions, provoked most
frequently by local antibiotics, local anesthetics, non-steroidal anti-inflammatory agents and less frequently corticosteroids.

A careful and detailed etiological clarification of each case is necessary, including a cross allergic reaction, so that efficient therapy methods and prophylactics can be undertaken.

BIBLIOGRAPHY