Vitamin B12 induced acneiform dermatitis

Introduction
Several preparations for Vitamin B12 (hydroxycobalamin, cyanobobalamin) suppletion therapy (Neurobion®, Soluvit®), are available in the Netherlands. SPCs mention only hypersensitivity reactions as ADR [1,2]. The Netherlands Pharmacovigilance Centre (Lareb) received reports of acneiform dermatitis.

Reports
Until 15 September 2005, Lareb received 32 reports on vitamin B12 suppletion. Five of these reports concerned acneiform dermatitis – which covers the following MedDRA lower level terms, rash acneiform, dermatitis acneiform, rash acneiform, dermatitis acneiform, and acneiform eruption - (table 1). All patients received vitamin B12 by injections.

Patient A was treated with monthly vitamin B12 injections and developed facial acneiform eruptions 13 days after the first injection. These symptoms where recognised and had occurred four years earlier also after vitamin B12 suppletion. Symptoms had resolved then after cessation.

Patient B had several complaints but acneiform dermatitis was recognised as a reaction similar to previous vitamin B12 injections. He perceived the complaints 10 days after start (three days after the second dose).

Patients C and D did not mention previous experiences or rechallenge. Patient E recovered after cessation.

Table 1. Reports of acneiform dermatitis associated with the use of vitamin B12 injections.

<table>
<thead>
<tr>
<th>Patient, Sex, age</th>
<th>Drug indication for use</th>
<th>Concomitant medication</th>
<th>Adverse drug reaction</th>
<th>Time to onset, outcome</th>
<th>remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>A, F, 33</td>
<td>100 μg im monthly vitamin B12 deficiency</td>
<td>vitamin D, metronidazol</td>
<td>acneiform dermatitis</td>
<td>13 days</td>
<td>same reaction occurred 4 years before</td>
</tr>
<tr>
<td>B, M, 38</td>
<td>1 mg im once weekly vitamin B12 deficiency</td>
<td>none</td>
<td>acneiform dermatitis, ear pain, headache, dizziness</td>
<td>10 days</td>
<td>recovered acneiform reaction had occurred before</td>
</tr>
<tr>
<td>C, F, 15</td>
<td>1 mg im</td>
<td>ferrofumarate, folic acid/iron</td>
<td>acneiform dermatitis face</td>
<td>2 weeks</td>
<td>unknown</td>
</tr>
<tr>
<td>D, F, 27</td>
<td>1 mg im once weekly fatigue</td>
<td>atenolol, levothyroxine, fluticasone, levocetirizine, montelukast</td>
<td>acneiform eruptions</td>
<td>?</td>
<td>unknown</td>
</tr>
<tr>
<td>E, F, 66</td>
<td>500 μg monthly</td>
<td>severe rash head and neck, eruptions</td>
<td>2 months</td>
<td>recovered after cessation</td>
<td></td>
</tr>
</tbody>
</table>

Other sources of information

Literature
Several case reports can be found in literature concerning acne like eruptions and systemic vitamin B12 or vitamin B6 and B12 suppletions [3-4]. The type of acne induced by vitamin B12 deserves a special place among acneiform eruptions. The eruption is monomorphic and of a particular type. It consists of voluminous follicular lesions which develop acutely.
after the first injections of vitamin B12 and disappear rapidly when treatment is discontinued [4]. Other descriptions include acniform rosacea, acniform rash, and rosacea fulminans. Women seem to be almost exclusively affected [3,6].

Databases
The association of vitamin B12 and acniform dermatitis is with 5 cases disproportionally present in the Lareb database (ROR 91.7 95% CI 34.6 - 243).

No reliable numbers of disproportionality of acniform dermatitis and vitamin B12 could be computed from the database of the Uppsala Monitoring Centre of the WHO contains due to the low number of reports and the non-specificity in the coding of the (multi) vitamin B preparations.

Mechanism
The aetiology of acniform dermatitis resembling rosacea triggered by vitamin B12 or B6 is unknown. Jansen et al. suggest that prolonged and increased excretion of the causative substances might cause an irritation of the follicular epithelium and subsequently produces an inflammatory reaction [6].

Conclusion
Lareb has received 5 reports of acniform dermatitis after intramuscular vitamin B12 suppletion. This association is supported by several case reports in literature and by disproportionality analysis in the Lareb database. This reaction is not mentioned in the SPCs of several vitamin B12 preparations.

References