SEVERE MERCURY-POISONING OF A CHILD AND INVOLVEMENT OF THE WHOLE FAMILY

Kutz S (1), Heinicke D (2), Hentschel H (1), Deters M (1)

(1) Poisons Information Centre Erfurt, Germany, (2) Hospital Bavaria Zscheizwitz, Kreischa, Germany

Objective

Elemental mercury is well absorbed via inhalation with the risk of damage to the central and peripheral nervous system after chronic exposure. We report a case of mercury-poisoning of a child with severe injury to the peripheral nerves. The involvement of the other family members is documented, as well.

Case Report

Patient: 13-year-old boy
Route of exposure: He found a box containing metallic mercury in a brownfield and played with it at home for many days in November 2008.
Time of admission:
3 months after exposure in February 2009
Symptoms:
- backache, inappetence
- progressive leg emphasized weakness, hyporeflexia
- paresthesiae of the extremities
- nausea, headache
- psychological signs in terms of mood and behaviour

Findings of the Family members

<table>
<thead>
<tr>
<th>Age</th>
<th>Symptoms</th>
<th>Mercury levels in blood and urine (µg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>brother 11</td>
<td>pallor, dizziness, nausea, headache</td>
<td>29 327</td>
</tr>
<tr>
<td>brother 15</td>
<td>no symptoms</td>
<td>26 270</td>
</tr>
<tr>
<td>father 39</td>
<td>dizziness, nausea, paresthesiae</td>
<td>25 174</td>
</tr>
</tbody>
</table>

All persons were treated with DMPS (Dimaval®).

Conclusions

- The patient developed a severe secondary peripheral neuropathy, despite mercury levels in the lower toxic range.
- DMPS-treatment reduced the mercury level in a normal range during 10 weeks, but the neurological symptoms improved slowly over several months. Apparently, the storage of the heavy metal in the nervous system was complete at the time of diagnosis and it could not be mobilized sufficiently by the antidote.
- In contrast to the brothers, there was no increase of the mercury urine level at the start of therapy suggesting interindividual differences of mercury toxicokinetic by genetic polymorphisms (1).

References: