Impaired Biotin Status in Anticonvulsant Therapy
Klaus-Henning Krause, MD,* Peter Berlit, MD,* and Jean-Pierre Bonjour, PhD†

In 264 epileptics undergoing long-term therapy with anticonvulsants, significantly reduced plasma biotin levels were found compared with a normal control group: 74% of the epileptics had biotin levels of 250 ng/L or less. In patients undergoing single-drug therapy, the mean plasma biotin levels for those treated with sodium valproate were higher than for those treated with phenytoin, primidone, or carbamazepine. The observed reduction in biotin levels might be a factor influencing the efficacy of these three anticonvulsants.


Recently we reported reduced plasma biotin levels in epileptics undergoing long-term therapy with anticonvulsants [5]. The plasma biotin levels showed a significant negative correlation with the total amount and average daily dose of anticonvulsants administered. Because of the small number of patients examined, no differentiation of the effect of single anticonvulsants could be made. Subsequently, we have investigated 264 patients.

Methods
Plasma biotin concentrations were determined microbiologically using *Lactobacillus plantarum* as a test organism, as described by Frigg and Brubacher [4]. The plasma biotin levels of 264 epileptics aged 20 to 40 years were measured. Each had received anticonvulsant therapy for at least one year. At the time of examination 135 patients were taking several anticonvulsants in combination, mostly phenytoin with carbamazepine (N = 29), primidone (N = 21), phenobarbital (N = 19), or a combination of primidone with either sodium valproate (N = 16) or carbamazepine (N = 13). One hundred twenty-nine epileptics were receiving single-drug therapy: 40 with primidone, 31 with phenytoin, 25 with carbamazepine, 12 with sodium valproate, 8 with CHP-phenobarbital, 4 with ethosuxi-
Plasma Biotin Levels in Epileptics Receiving Single-Drug Therapy

<table>
<thead>
<tr>
<th>Anticonvulsant</th>
<th>No. of Patients</th>
<th>Biotin (ng/L, mean ± SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenytoin</td>
<td>31</td>
<td>220 ± 69</td>
</tr>
<tr>
<td>Primidone</td>
<td>40</td>
<td>201 ± 55</td>
</tr>
<tr>
<td>Carbamazepine</td>
<td>25</td>
<td>218 ± 59</td>
</tr>
<tr>
<td>Sodium valproate</td>
<td>12</td>
<td>340 ± 171</td>
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</tbody>
</table>

Plasma biotin levels in epileptics receiving long-term anticonvulsant therapy (N = 264) and in controls (N = 93).

Correlation of Isotopic Cisternographic Patterns in Multiple Sclerosis with CSF IgG Values

S. Bartolini, MD,* D. Inzitari, MD,* A. Castagnoli, MD,† and L. Amaducci, MD*

Thirty-eight patients with multiple sclerosis (MS) were examined with isotopic cisternography (IC) in order to study cerebrospinal fluid (CSF) dynamics. Cisternography was also performed in 15 patients with amyotrophic lateral sclerosis and in 14 with senile dementia of the Alzheimer type as controls. IC pattern of "mixed" type was found in 18 MS patients and all those with Alzheimer senile dementia examined, while the IC examination did not show abnormality in any of 15 patients with amyotrophic lateral sclerosis. In MS patients, the abnormal IC picture proved to be significantly correlated with the CSF IgG values as calculated by Link's and Tourtelotte's formulas. The abnormal IC in MS may be due to altered CSF reabsorption or increased transependymal flow, or it may be related to the abnormal concentration of IgG.

In recent years, many investigators have utilized isotope cisternography (IC) to evaluate the formation and absorption of cerebrospinal fluid (CSF) [2-4]. Attempts to correlate the results of isotope tests with various disease states have not always produced consistent associations. Nevertheless, certain patterns have been attributed to the presence of inflammatory...

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