Letter to the editor
Statins and homocysteine

To the Editor:

Hyperhomocysteinemia confers an independent risk factor for atherosclerosis besides the well-established risk factors, such as hypercholesterolaemia, hypertension, diabetes mellitus, smoking habit and family history [1–3]. However, the effect of statins (especially the most potent drugs of this class) on homocysteine (Hcy) plasma levels is not yet well established. Five recently published studies examined the effect of statins (simvastatin and atorvastatin) on Hcy plasma levels [4–8] (Table 1). Dieter Luftjohann et al. reported a significant decrease in Hcy plasma levels after high doses of simvastatin (80 mg daily) for 24 weeks, suggesting a possible contribution to the reduction in cardiovascular events seen with high doses of simvastatin. On the contrary, the other studies (Table 1) failed to detect any changes in Hcy after statin therapy. Since the number of patients participating in the above studies was limited, we examined the effect of atorvastatin (40 mg daily) on Hcy plasma levels in 61 patients with hyperlipidaemia attending our lipid clinic. As shown in Table 2, the administration of atorvastatin (40 mg daily) for 10 weeks did not affect the Hcy plasma levels (10.4 ± 3.6 μmol/l before vs. 10.1 ± 3.4 μmol/l after atorvastatin administration). We suggest that the antiatherogenic properties of statins, other than their cholesterol lowering effect, are not through any change in Hcy plasma levels.

Table 1
Studies examined the effect of statins on homocysteine plasma levels

<table>
<thead>
<tr>
<th>Study</th>
<th>Number of patients</th>
<th>Statin (mg/day)</th>
<th>Homocysteine plasma levels (μmol/l) mean ± S.D.</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michelde Lorgeril et al., 1999</td>
<td>28</td>
<td>Sim va 20 mg*</td>
<td>12.2 ± 3.9</td>
<td>12.3 ± 5.4</td>
</tr>
<tr>
<td>Jan Malik et al., 2001</td>
<td>29</td>
<td>Atorva 10 mg*</td>
<td>12.4 ± 2.7</td>
<td>12.3 ± 2.4</td>
</tr>
<tr>
<td>Dieter Luftjohann et al., 2001</td>
<td>18</td>
<td>Simva 80 mg</td>
<td>13.0 ± 4.0</td>
<td>10.6 ± 3.5</td>
</tr>
<tr>
<td>Philippe Giral et al., 2001</td>
<td>24</td>
<td>Atorva 10 mg</td>
<td>12.1 ± 5.3</td>
<td>12.1 ± 6.5</td>
</tr>
<tr>
<td>Susumu Sasaki et al., 2002</td>
<td>15</td>
<td>Atorva 10 mg</td>
<td>9.1 ± 5.3</td>
<td>8.8 ± 1.0</td>
</tr>
</tbody>
</table>

* Simvastatin.
  b Atorvastatin.

References


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