アスコルビン酸大量投与の血漿カルニチンに及ぼす効果

伊規須，英輝
九州大学健康科学センター

藤野，武彦
九州大学健康科学センター

銅直，孝子
九州大学健康科学センター

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High Ascorbic Acid Intake and Plasma Carnitine

Hideki IGISU, Takehiko FUJINO, Takako DONAO

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Carnitine and ascorbic acid were reported to ameliorate some type of hyperlipidemia. On the other hand, a recent study showed that ascorbic acid is a cofactor in the biosynthesis of carnitine. We therefore studied whether or not high ascorbic acid intake affects plasma level of carnitine.

Nineteen male university students (18-21 years old) who gave their informed consent participated in the study. Eleven students ("subjects") took ascorbic acid (3.0 grams per day) and 8 students ("controls") took placebo (composed mainly of tartaric acid) for three months. We obtained heparinized blood after overnight fast and measured carnitine and ascorbic acid in plasma at 1, 2 and 3 months after the study was started.

The ascorbic acid level was significantly higher in "subjects" than in "controls". However, no difference was found in the carnitine level (see accompanying table). Thus, high ascorbic acid intake does not appear to change plasma carnitine level.

Table. Plasma ascorbic acid and carnitine after high ascorbic acid intake (mean±SD).

<table>
<thead>
<tr>
<th></th>
<th>1 month</th>
<th>2 months</th>
<th>3 months</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ascorbic acid (mg/100ml)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>subjects</td>
<td>1.62*±0.32 (n=11)</td>
<td>1.63*±0.25 (n=11)</td>
<td>1.42*±0.52 (n=11)</td>
</tr>
<tr>
<td>controls</td>
<td>1.08 ±0.19 (n=8)</td>
<td>1.14 ±0.08 (n=7)</td>
<td>0.72 ±0.20 (n=8)</td>
</tr>
<tr>
<td><strong>Carnitine (μmoles/100ml)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>subjects</td>
<td>4.75±0.91 (n=11)</td>
<td>4.83 ±0.70 (n=11)</td>
<td>4.58 ±0.78 (n=11)</td>
</tr>
<tr>
<td>controls</td>
<td>5.08 ±0.85 (n=8)</td>
<td>5.20 ±0.69 (n=7)</td>
<td>4.86 ±0.88 (n=8)</td>
</tr>
</tbody>
</table>

*p < 0.005

References

Institute of Health Science, Kyushu University, Kasuga city, Fukuoka 816, Japan.
