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High Ascorbic Acid Intake and Plasma Carnitine

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Carnitine^{1, 2} as well as ascorbic acid³ were reported to ameliorate some type of hyperlipidemia. On the other hand, a recent study⁴ showed that ascorbic acid is a co-factor 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 carnitine⁵ and ascorbic acid⁶ 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).

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

*p<0.005

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