A case report of the nutritional status induced by Chlorella ingestion in a patient after gastric resection

Presented at the 22nd Annual Meeting of Integrative Medicine Japan

[Study objectives]
Chlorella is a food rich in folate and vitamin D. We have reported that continued Chlorella ingestion reduced the level of homocysteine (a risk factor for the onset of vascular disease) in healthy subjects. A substantial percentage of patients after gastric resection are known to be affected by undernutrition due to decreased dietary intake and reduced ability of digestion and absorption by gastric resection. In the present study, we investigated the nutritional status induced by continued Chlorella ingestion in a patient after gastric resection.

[Study methods]
The subject of the present study was a male patient in 60s who is currently on outpatient care at Kokubunji Suzuki Clinic and has provided written informed consent to study participation. The subject ingested 15 Chlorella tablets per day (3 g) in two divided intake (in the morning and evening) for 12 weeks. Blood levels of folate, vitamin D (25(OH)D), and homocysteine were determined at baseline and at 4-week intervals during the ingestion period.

[Results]
The folate level tended to be low at baseline (5.6 ng/mL) but increased with Chlorella ingestion. (Week 4 of ingestion, 8.4 ng/mL; Week 8, 8.7 ng/mL; Week 12, 8.1 ng/mL)
In addition, the 25(OH)D level tended to be low at baseline (8.9 ng/mL) but increased with Chlorella ingestion. (Week 4 of ingestion, 20.4 ng/mL; Week 8, 21.4 ng/mL; Week 12, 20.6 ng/mL)
No change in homocysteine level was observed compared with the baseline value (11.0 nmol/mL). (Week 4 of ingestion, 13.2 nmol/mL; Week 8, 10.3 nmol/mL; Week 12, 13.5 nmol/mL)

These results demonstrated an increase in levels of folate and vitamin D induced by Chlorella ingestion, thereby confirming an improvement of the nutritional status in a patient after gastric resection. Thus, the present study suggested that Chlorella ingestion might be beneficial for improvement of the nutritional state in patients after gastric resection.
- **Folate (ng/mL)**

  - Baseline: 5.6
  - 4W: 8.4
  - 8W: 8.7
  - 12W: 8.1

  *Lower limit of normal level, 3.6 ng/mL*

- **Vitamin D (25(OH)D) (ng/mL)**

  - Baseline: 8.9
  - 4W: 20.4
  - 8W: 21.4
  - 12W: 20.6

  *25(OH)D levels lower than 10 ng/mL indicate vitamin D deficiency.*

- **Total plasma homocysteine (nmol/mL)**

  - Baseline: 11.0
  - 4W: 13.2
  - 8W: 10.3
  - 12W: 13.8

  *Upper limit of normal level 15.0 nmol/mL*
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