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EFFECT OF BCAA-CONTAINING FOOD IN IMPROVING THE MALNUTRITION OF ELDERLY HEMODIALYSIS PATIENTS

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Purpose

In recent years, the number of elderly patients on long-term dialysis has increased, resulting in a higher incidence of malnutrition in these patients. This study investigated whether the continuous ingestion of food containing Branched Chain Amino Acid (BCAA; valine, leucine, isoleucine) can improve the nutritional state of elderly patients on dialysis suffering from malnutrition.

Methods

26 hemodialysis patients (12 men, 14 women) were chosen from a total of 57 people subjected to dietary management in our hospital and nursing home. They were not undergoing tube feeding, and their Alb was under 3.5 g/dl.
The patients were divided in two groups: those who were able to continue consuming galette-like food containing BCAA (4000 mg/portion) for 9 months (Group C; 6 subjects) and those consumed foods for only 3 months and then stopped (Group I; 20 subjects).
We performed comparative studies of BCAA concentration in the blood, Alb, hs-CRP and appetite before and at 3 and 9 months after the onset of biscuit consumption.

Subjects

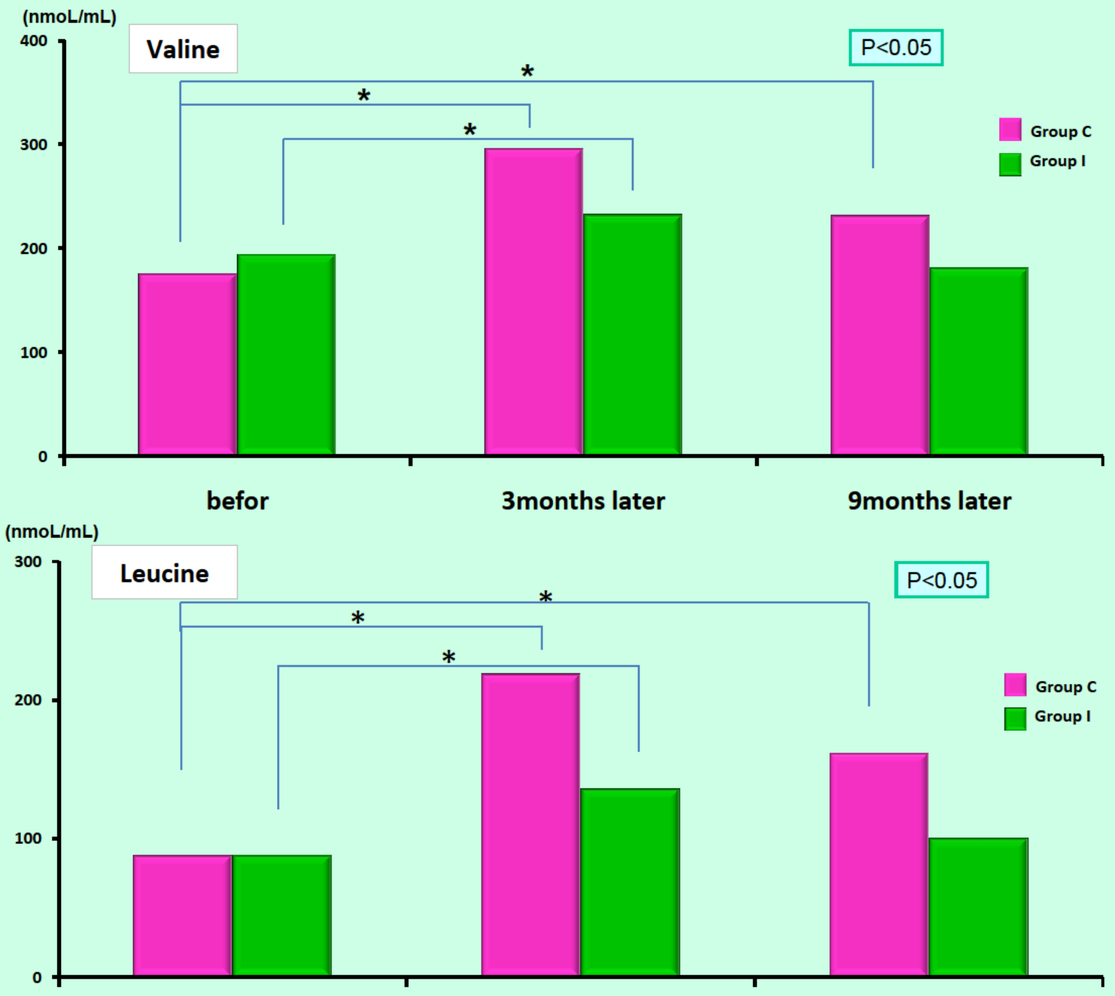
	Group C	Group I
Patiants numbers	6	20
Mean age (years)	81.4±4.8	78.9±6.2
HD Vintage (years)	9.0±4.1	6.8±4.4
Avereage intake/day (mg)	3828.7	2075.9

Results

During the 3-month period between February and May 2013, the subjects tried consuming the foods containing BCAA, and they did not have to pay for the foods. However, subjects in Group I stopped consuming BCAA foods after 3 months because they were required to pay for the foods from that moment on.

	Group	befor	3months later	9months later
Valine	C	176.1±44.2	296.4±120.0 *	231.9±73.7 *
	I	194.7±49.7	232.6±58.2 *	181.6±48.7
Leucine	C	88.2±30.7	219.0±124.2 *	162.1±91.5 *
	I	88.2±30.7	135.9±56.2 *	100.4±31.9
Isoleucine	C	60.2±20.8	117.0±67.2 *	91.2±53.3 *
	I	60.2±20.8	77.4±34.0 *	84.5±80.7
BCAA	C	324.5±90.0	632.4±308.6 *	485.2±217.4 *
	I	361.7±99.3	456.0±136.1	348.3±98.5
Fisher ratio	C	2.8±0.6	5.5±2.3 *	4.3±1.4 *
	I	4.5±5.6	3.7±1.1	3.1±0.7

*:befor vs 3M,9M p<0.05



Conclusion

It is difficult to supply a sufficient amount of BCAA only through meals to elderly hemodialysis patients suffering from malnutrition; therefore, providing BCAA-containing food to patients who are able to orally ingest food effectively improves their nutritional state. In addition, BCAA concentration decreased after the subjects in the group I stopped eating BCAA foods; this shows that the regular consumption of BCAA-containing food adjusts the amino acid balance, which is necessary for protein synthesis in the body. However, the cost of BCAA-containing food makes it difficult to continue their consumption.

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