노인재활

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OP2-4-4

Clinical assessment of the newly developed fortified formula with essential nutrient in elderly

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Objective

To quantitatively evaluate the swallowing function and safety of the developed fortified formula with essential nutrients for elderly.

Methods

A total of 50 healthy elderly over 65 years old enrolled in this study. Videofluoroscopic swallowing study (VFSS) was used to examine swallowing physiology with commercially available plain yogurt (So wa Namu, Dong Won) and developed fortified formula containing 5% of lipid nanoparticle carrier with 200ppm of vitamin D3 and vitamin E. Videofluoroscopic Dysphagia Scale (VDS), American Speech-Language-Hearing Association National Outcome Measurement System (ASHA NOMS), Modified Penetration Aspiration Scale (MPAS), and duration of the swallowing process (Oral transit time (OTT), Pharyngeal delay time (PDT), Pharyngeal transit time (PTT)) were measured. The consistency of the yogurt at a temperature of 4˚C was also measured using an instrument similar to the USDA consistometer. Sensory acceptability composed of 6 items including appearance, flavor, taste, texture, overall preference and purchase intent was conducted.

Results

Swallowing the commercially available plain yogurt and fortified formula showed safe swallowing in 50 subjects (0%) without penetration or aspiration. Compared with the commercially available plain yogurt, in developed diet, OTT was 0.14 seconds shorter, showing significant difference. (Tabel 1) Both food showed similar consistency. The sensory acceptability test got a good score in overall preference with acceptable sensory characteristics.

Conclusion

We observed that developed fortified formula with essential nutrient was tolerable and safe as a substitute for commercial yogurt. Future study of nutritional improvement in elderly is necessary.

Table1. Comparison of duration of the swallowing process results between Commercially available plain yogurt and Developed fortified formula

Category	Commercially available plain yogurt	Developed fortified formula	t	P
Oral Transit Time	0.64±0.37	0.50±0.25	2.951	.006*
Pharyngeal Delay Time	0.04±0.04	0.03±0.03	.763	.451
Pharyngeal Transit Time	0.69±0.02	0.70±0.02	-.383	.704

*statistically significant p value