ORAL PRESENTATION 2-4

노인재활

발표일시 및 장소: 10 월 19 일(토) 14:00-14:10 Room B(5F)

OP2-4-1

Association between Vitamin D Deficiency and Cognitive Impairment in the Elderly Population

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Background

In the human body, vitamin D (VitD) is well known that plays an important role in bone and calcium metabolism. VitD has other roles in the body, including modulation of cell growth, neurogenesis, neuroprotective, detoxification, and immune function, and reduction of inflammation. Recent studies revealed that the insufficiency of VitD is a risk factor for cognitive decline or dementia. Because VitD has a role in normal brain functions, insufficiency of VitD may affect to decreased memory and cognitive function.

Method

Using data from two years of the baseline data of Korean Frailty and Aging Cohort study (KFACS), a total of 3014 subjects participants (1432 men and 1582 women) recruited in this survey. To assessment the cognitive function, a short form of the Korean version of the Consortium to Establish a Registry for Alzheimer's Disease (CERAD-K), an assessment of cognitive status in patients with dementia was used. Among the CERAD-K tests, we included word list memory/recall/recognition, digit span (forward, backward), trail making test (TMT) A, and MMSE-KC. Serum samples were collected when the visit. 25-hydroxyvitamin D (25OHD) was measured. Serum 25OHD concentrations were divided into clinically relevant categories such as deficient (<10 nmol/L), insufficient (10-30 nmol/L) and sufficient (≥30 nmol/L).

Results

The mean age of the participants was 76.5 ± 3.89 years, and 52.5% were women. From a total of 3014 participants, 121 (4.1%) were classified to 25OHD deficiency and 2265 (75.1%) was 25OHD insufficiency. Only 628 (20.8%) was sufficient for 25OHD. Among the three groups, MMSE-KC, TMT A, and digit span tests were better in the order of sufficient, insufficient group and deficiency group, which were statistically significant ($p<0.001$). In regression analysis, after adjusting for age, sex, body mass index, education, center,

seasonality, physical activity, and alcohol use, 25(OH)D was associated with higher MMSE-KC (β=0.018, $p<0.001$), better performance on TMT A (β=–0.54, $p<0.000$) and digit span (β=0.02, $p<0.001$) tests.

Conclusion

Low levels of VitD were associated with substantial cognitive decline in the elderly Korean population including general cognition, processing speed, and working memory. VitD supplementation raises important possibilities for treatment and prevention for cognitive decline.