

ORAL PRESENTATION 2-2

노인재활

발표일시 및 장소 : 10 월 26 일(금) 14:15-14:25 Room C(5F)

OP2-2-1

Association between Asymmetry in Lean Mass of Lower Extremities and Balance in Elderly People

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Objective

Physical abilities, including balance function, are impaired with increasing age. Previous study reported that asymmetry in strength of lower extremities diminish the balance function in elderly people. Asymmetry in strength of lower extremities was reported to be related to asymmetry in lean mass of lower extremities. The aim of this study is to examine whether asymmetry of lower extremity lean mass would affect the balance function in elderly people.

Method

This study utilized a cross sectional analysis of a pre-existing database from the Korean frailty and aging cohort study. The lower extremity lean mass was measured in 951 community-dwelling elderly subjects (age, 75.86±0.13 years) using dual-energy x-ray absorptionmetry (DEXA). Asymmetry was established using a limb symmetry index (LSI) calculated using the following standard equation : $LSI = 2 \times 100 \times (\text{Right limb} - \text{Left limb}) / (\text{Right limb} + \text{Left limb})$. The clinical balance tests were carried out using the timed up and go (TUG) test, and short physical performance battery (SPPB). Also, The Results of the Korean frailty and aging cohort study questionnaire were used to evaluate the daily life in relation to balance. We assessed the relationship between the LSI and balancing indexes (TUG time, SPPB time, sitdown time). Also, We evaluated whether LSI affect the daily life including falling.

Results

The LSI was significantly associated with SPPB time ($p < 0.001$). Using the cutoff value 5 of LSI, 287 people had values more than cutoff value. Their SPPB time was significantly longer than those found in the 664 people whose LSI was below the cutoff value ($p < 0.001$). However, The LSI had no significant relationship with TUG time ($p = 0.109$) and sitdown time ($p = 0.493$). Also, The experience of falling was not significantly associated

with the LSI ($p=0.347$). But, in a questionnaire asking for confidence in the balance, the higher the LSI, the harder it was to walk on a slippery road with ice ($p=0.007$). In addition, the question of whether it is difficult to climb 10 stairs, the LSI value was significantly higher in the group that answered "yes" ($p=0.0016$).

Conclusion

Our Results reveal that the asymmetry of lower extremity lean mass affect balance function. As the asymmetry get worse, it became more difficult for the elderly to walk, to sit on the chair, to get up, to walk on slippery roads, and to climb the stairs.