Is it effective on physical function improvement combined therapy of branched-chain amino acids (BCAAs) and low intensity exercise in frail and pre-frail elderly people requiring long-term care?

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We examined the effects and feasibility of a twice-weekly combined therapy of branched-chain amino acids (BCAAs) and exercise on physical function improvement in frail and pre-frail elderly people requiring long-term care. We used a crossover design in which the combination of exercise and nutritional interventions was carried out twice a week during cycles A (3 months) and B (3 months) and the exercise intervention alone. The exercise intervention entailed the following 5 training sets: 3 sets of muscle training at 30% of maximum voluntary contraction, 1 set of aerobic exercise, and 1 set of balance training. For the nutritional intervention, 6 g of BCAAs or 6 g of maltodextrin was consumed 10 min before starting the exercise. We determined grip strength and quadriceps muscle isometric strength, performance on the Functional Reach Test (FRT) and the Timed Up and Go test, and activity level. In the comparison between the BCAA group and the control group after crossover, the improvement rates in quadriceps muscle strength and FRT performance were significantly greater (by approximately 10%) in the BCAA group. In the comparison between different orders of BCAA administration, significant effects were shown for the quadriceps muscle in both groups only when BCAAs were given. The combination of BCAA intake and exercise therapy yielded significant improvements in quadriceps muscle strength and dynamic balance ability.