

Evaluation of amino acid intake in skeletal muscle metabolism in sarcopenic patients

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Objective

Skeletal muscle decreases is called as sarcopenia, it is important prognostic factor for age, obesity and heart failure. Proteins are important in muscle synthesis. Amino acids leucine have been found not only as raw material of protein synthesis but also stimulator of muscle synthesis for itself. This study has the objective to evaluate protein and leucine and BCAA intake in sarcopenia patients and relationship between physical activity and the amount of amino acid intake. And finally, we clarify the adequate amount of protein and leucine and BCAA intake as nutrition for treatment.

Material and Method:

13 subjects were studied, mean age was 70.8 (6.76) yrs. Body composition by dual energy X-ray absorptiometry (DEXA), exercise capacity by cardiopulmonary exercise test (CPX), meal photos by mobile phone and handwriting were recorded and analyzed by Excel Nutrition Software (エクセル栄養君). The stages of nutrition were evaluated by Controlling Nutritional Status (CONUT). HOMA-IR was used for evaluation of insulin resistance.

All subjects entered exercise program with resistance training, bike exercise, walking trainers, aerobic exercise and divided to intervention group and control group on 3 month-amino acid supplement program with "amino jelly leucine 40" from April 15, 2015.

Results:

There were 3 patients with mild nutrition disorder by CONUT. However, there were no difference of nutrition between normal and mild nutrition disorder. Intake of leucine in amino acids showed significant positive relation to skeletal muscle mass ($p=0.01$). There were significant positive relation between skeletal muscle index and energy intake ($p=0.01$).

Conclusions:

Detail examination of nutrition including amino acid intake might be important to evaluate sarcopenia patients.