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Effectiveness of nutritional guidance focusing on leucine intake during cardiac rehabilitation maintenance

(心臓リハビリテーション維持期におけるロイシン摂取量に着目した栄養指導の有効性)

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Abstract

This study examined the effects of six-month nutritional guidance program focused on leucine intake on blood leucine concentration, lean body mass, and muscle strength in patients undergoing maintenance cardiac rehabilitation.

Seven patients in the intervention group (53.2 ± 18.2 years) and Seven patients in the control group (58.6 ± 15.3 years) were included in the analysis. Dietary survey results showed that the six-month intervention significantly ($p < 0.05$) increased both meat and protein intake and estimated leucine intake only in the intervention group. The blood leucine concentration in the intervention group increased in five of seven participants due to the intervention, but the rate of change in blood leucine concentration was not significantly different between the two groups. The percentage change in lean body mass in the intervention group was significantly greater than in the control group ($p = 0.035$). The rate of change in blood leucine concentration and the rate of change in lean body mass were positively correlated only in the intervention group ($r = 0.777$, $p = 0.040$). In the intervention group, the rate of change in blood leucine concentration was also positively correlated with the rate of change in grip strength ($\rho = 0.857$, $p = 0.014$).

These results suggest that nutritional guidance focused on increasing leucine intake and lean body mass in patients undergoing maintenance cardiac rehabilitation increased leucine intake and lean body mass. In addition, it was suggested that an increase in muscle strength could be expected.