

補充富含支鏈胺基酸營養品對於社區中老年 肌少症之成效

柯俊宏^{1,8} 吳幸娟² 李宜樺³ 張尹凡⁴ 張秦松⁴ 許永河^{5,6} 莊華盈⁷
吳至行^{4,8}

摘 要

背景：本研究探討社區有肌少症高風險之中老年人，給予富含支鏈胺基酸營養品補充前後之變化，藉此了解營養補充於改善肌少症的可能成效。

方法：本研究採介入性研究設計，共收集33位(男/女=6/27)符合肌少症前期、肌少症高風險或肌少症受試者，平均年齡66.6歲。肌少症判定根據為2014年AWGS修訂版，每位受試者均給予富含支鏈胺基酸(BCAA, Amino Vital Pro[®])營養品，每日早晚各一包持續補充35天，補充期間受試者不改變平日飲食與活動習慣。以單頻八極生物電阻抗分析儀(Tanita, BC-418, Tokyo, Japan)分析身體組成，評估支鏈胺基酸補充前後身體質量指數、體脂肪、骨骼肌肉質量指數、手握力和六公尺行走速度變化。

結果：全體33位個案持續接受富含支鏈胺基酸營養品補充5週後發現骨骼肌肉質量指數增加0.15公斤/公尺² ($p=0.008$)、六公尺行走速度改善0.12公尺/秒 ($p<0.001$)、手握力增加3.4公斤 ($p<0.001$)。針對21位肌少症者以富含支鏈胺基酸營養品補充5週後分析發現體重稍微增加0.45公斤 ($p=0.041$)、身體質量指數增加0.18公斤/公尺² ($p=0.032$)、骨骼肌肉質量指數增加0.24公斤/公尺² ($p=0.001$)、六公尺行走速度改善0.12公尺/秒 ($p<0.001$)、手握力增加2.99公斤 ($p<0.001$)。

結論：有肌少症前期、肌少症高風險或肌少症社區中老年人經由5週富含支鏈胺基酸的營養補充可以改善肌少症的相關指標。

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關鍵詞：肌少症、支鏈胺基酸、營養補充、中老年人

¹佳里奇美醫院家庭醫學科、³營養科、⁷神經內科、²中華醫事科技大學食品營養系、⁴國立成功大學醫學院附設醫院家庭醫學部、⁸老年學研究所、⁵國立成功大學社會科學院經濟學系、⁶政治經濟學研究所

通訊作者：吳至行

通訊處：台南市勝利路 138 號（國立成功大學醫學院附設醫院家庭醫學部）

電話：(886) 6-2353535 轉 5200 傳真：(886) 6-2754243

E-mail: paulo@mail.ncku.edu.tw

共同通訊作者：莊華盈

通訊處：台南市佳里區興化里佳里興 606 號（佳里奇美醫院神經內科）

電話：(886) 6-7263333 轉 37129 傳真：(886) 6-2754243

E-mail: 851139@mail.chimei.org.tw

Supplemented with Enriched Branched Chain Amino Acid Nutrient for Sarcopenia in Community Dwelling Middle-Aged and Old People

Chun-Hung Ko^{1,8}, Shin-Jiuan Wu², Yi-Hua Lee³, Yin-Fan Chang⁴, Chin-Sung Chang⁴, Yuan-Ho Hsu^{5,6}, Hua-Ying Chuang⁷, Chih-Hsing Wu^{4,8}

Abstract

Background: Sarcopenia is an age-related, progressive, generalized loss of muscle mass and the decrement in physical activity. Sarcopenia is associated with subsequent health hazards such as disability, falls, functional degeneration, hospitalization and death. Nutrition plays an important role for muscle maintenance. However, the effect of nutritional supplement for sarcopenia is still uncertain. We try to figure out the effect of enriched branched-chain amino acid (BCAA) nutrient on muscle mass, strength and physical performance of sarcopenia in the middle-aged and old people in Tainan.

Design: Thirty-three subjects aged 46-80 year-old (mean: 66.6, M/F: 6/27) with pre-sarcopenia, at risk of sarcopenia or sarcopenia were purposed to receive BCAA-Amino Vital Pro 7.2 g (Leucine 1.08 g, Isoleucine 0.86 g, Valine 0.72 g, Glutamine 1.30 g, Arginine 1.22 g, other amino acids 2.02 g) daily for five weeks. The dietary habit and physical activity were recorded without specific intervention for each subject. Body composition measured by bioelectrical impedance analysis (BC-418, Tanita Corp., Tokyo, Japan), grip strength (TKK 5101 Grip-D; Takey, Tokyo, Japan) and gait speed were evaluated at baseline and after five weeks of nutritional supplement. Skeletal muscle mass was estimated by Janssen's equation. Sarcopenia was defined according to the modified 2014 consensus of the Asian Working Group on Sarcopenia (AWGS).

Results: After 5-week enriched branched chain amino acid supplement, there are significant improvements in skeletal muscle mass index (SMI, +0.15 kg/m², $p=0.008$), 6-meter gait speed (+0.12 m/s, $p<0.001$), and grip strength (+3.4 kg, $p<0.001$) in 33

subjects. Furthermore, in 21 sarcopenia subjects, the significant improvements are found in SMI (+0.24 kg/m², $p=0.001$), 6-meter gait speed (+0.14 m/s, $p<0.001$), and grip strength (+2.99 kg, $p<0.001$).

Conclusions: A 5-week intervention of oral enriched branched chain amino acid nutritional supplement results in the improvements in skeletal muscle mass, muscle strength and physical performance in middle-aged and old adults with pre-sarcopenia, at risk of sarcopenia and sarcopenia.

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Key words: Sarcopenia, branched-chain amino acid (BCAA), nutritional supplement, middle-aged and old people

¹Department of Family Medicine, ³Department of Nutrition ⁷Department of Internal Medicine, Chi Mei hospital, Chia Li, Tainan, Taiwan; ²Department of Food and Nutrition, Chung Hwa University of Medical Technology, Tainan, Taiwan; ⁴Department of Family Medicine, National Cheng Kung University Hospital, Tainan, Taiwan; ⁸Institute of Gerontology, National Cheng Kung University Medical College, Tainan, Taiwan; ⁵Department of Economics, College of Social Science, National Cheng Kung University, Tainan, Taiwan; ⁶Graduate Institute of Political Economy, College of Social Science, National Cheng Kung University, Tainan, Taiwan

Correspondence to: Chih-Hsing Wu

No. 138, Sheng-Li Road, Tainan, 70403, Taiwan
(Department of Family Medicine, National Cheng Kung University Hospital)
Tel: (886) 6-2353535 ext. 5200 Fax: (886) 6-2754243

E-mail: paulo@mail.ncku.edu.tw

Correspondence to: Hua-Ying Chuang

No. 606, Jialising, Xinghua Vil., Jiali Dist., Tainan City 722, Taiwan
(Department of Internal Medicine, Chi Mei hospital, Chia Li, Tainan, Taiwan)
Tel: (886) 6-7263333 ext. 37129 Fax: (886) 6-2754243

E-mail: 851139@mail.chimei.org.tw