免疫調整配方對加護病房患者營養狀況及免疫反應之影響

Effects of immune-modulating formula on nutritional status and immune response in ICU patients

中文摘要

本實驗以加護病房中的重症患者爲對象，研究免疫調節配方在加護病房常規使用的可行性，並探討免疫調節配方對重症患者是否可改善營養狀況，調節免疫功能。實驗設計爲經由腸道給予兩種免疫調節配方（IMPACT-glutamine，Nu-Immune），兩配方中均含有精胺酸（arginine）、魚油（omega-3 fatty acid）、核?酸（nucleotides）、麩醯胺（glutamine）等之均衡完整營養品，或一般高蛋白質配方。以台大醫院一般外科加護病房中的患者 12 名，隨機分成 2 組，比較 2 組間及個案使用腸道營養配方前後 per-albumin、albumin、CRP（C-reactive protein）、WBC（white blood cell count）、APACH II score（Acute Physiology and Chronic Healthy Evaluation）、SIRS（systemic inflammatory response syndrome）、T-lymphocyte 等之差異性。結果顯示基本資料及腸道營養介入前，男性爲 6 人，女性爲 6 人，性別、年齡、身高、體重、APACH II score、熱量需求、平均攝取量、Albumin、Pre-albumin、WBC、CRP、SIRS score、APACH II score 等兩組間無差異。給予 7 日的腸道營養補充之後，兩組 APACH II score、SIRS score 明顯下降，營養指標 Albumin、Pre-albumin 則顯著上升。經由流式細胞儀的分析，輔助 T 細胞（CD4+），殺手 T 細胞（CD8+），給予管灌營養補充品灌食前及灌食之後或兩組間並無明顯差異性；但在灌食第 3 天，淋巴球亞群中實驗組的 CD8 高於對照組及 CD4/CD8 ratio 實驗組低於對照組，且具有統計上的差異；其餘 CD4、CD3、CD19、CD11a/CD18、CD11b/CD18 在灌食前後或兩組間均無明顯差異。對照組總攝取量明顯高於實驗組。本研究結果顯示，中度重症患者(APACH II score 8~15)，若即早給予腸道營養可改善營養狀況，在使用含有精胺酸（arginine）、魚油（omega-3 fatty acid）、核?酸（nucleotides）、麩醯胺（glutamine）等之均衡完整免疫調整配方後，可改善疾病之嚴重程度。重症患者腸胃道對一般高蛋白質配方的接受性高於免疫配方，使用免疫調整配方在改善營養狀況及對細胞性及體液性免疫反應上與一般高蛋白質配方並無差異。

英文摘要

This study compared the effects of immune-modulating formula (Impact-glutamine and Nu-Immune) and general high protein formula on the immunological response, clinical outcome, and nutritional status in critically ill patients. The immune-modulating formula contains arginine、omega-3 fatty acid、nucleotides and glutamine in addition to complete balanced nutrition. Twelve ICU patients with APACH II score > 8 were randomly assigned to control and experimental groups.

Blood samples were collected 1, 3, 7 d after enteral feeding started in all patients, and were analyzed for biochemical and immunologic parameters. The results showed that after enteral feeding for 7 days, APACH II and SIRS score reduced, while albumin and pre-albumin increased no matter the patients were fed with immune-modulating or general formula. The control group had higher energy intake than the experimental group. Immune-modulating diet improved the severity of the diseases after feeding for 7 d. There were no differences in CD3, CD4, CD19, CD11a/CD18 and CD11b/CD18 before and after enteral feeding in both groups. These results suggest that enteral feeding improved nutritional status in ICU patients. Formula with specific nutrients supplementation reduced severity of the diseases. However, compared with the general high protein formula, immune-modulating diet had no favorable effects on immune response in critically ill patients.