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Nutritional and Immune Effects of Early Enteral Feeding Supplemented by Arginine, Glutamine and Omega 3 Fatty Acid in Critically Ill Patients

Nutritional and Immune Effects of Early Enteral Feeding Supplemented by Arginine, Glutamine and Omega 3 Fatty Acid in Critically Ill Patients

1. Nancy Margarita Rehatta --> Department of Anesthesiology and Reanimation Airlangga University School of Medicine Dr Soetomo Teaching Hospital, Surabaya

Abstract

Objective: This study was performed to evaluate nutrition, immune cell respond and clinical outcomes of early enteral feeding enriched with arginine, glutamine and omega 3 fatty acid. Material and method: Study design: Preliminary prospective, one center. Twenty eligible ICU patients were involved to this study by consecutive sampling from March 2003 - September 2004, age between 25-65 years, no previous infection, APACHE II score 10 -15. They were randomized to receive either standard or immune enhancing formula enriched with glutamine, arginine, omega 3 fatty acids, and high protein. Formula was given with the concentration 0.5 kcal/cc on the day one and increased to meet the target calories 25-30 kcal/kg/day and 1 - 1.5 g protein/kg/day. The laboratory measurement was made on the day one and seventh. Beside the routine measurement prealbumin and transferrin level were measured as nutritional indicator, total lymphocytes count, CD4 and CD8 cell count were used as immune function indicators. Major complication, mortality, aspiration and GI adverse reaction were observed. Results: The standard group received more calories (33.3 kcal/kg/day) and less protein (0.98g/kg/day) compared to immune enhancing group which received less calories b (24.9 kcal/kg/day) but more protein (1.51 g/kg/day). Prealbumin significantly increased in the treatment group, but no difference in ICU length of stay and ventilator days. The ICU mortality is higher in standard subgroup which use ventilator more than 1 week, compared to the same subgroup in immune enhancing group (3/10 vs 0/10). All of deaths were caused by severe pneumonia. Statistically, there was no significant change of TLC and CD4, CD8 cell count in both groups, but there was an inclination tendency of CD4 count and declination tendency of CD8 count in immune enhancing group. The two formulas were tolerated well since only one diarrhea in standard group. Conclusion: Early enteral feeding with immune enhancing in critically ill scored APACHE II 10-15 have beneficial effects for clinical outcome, nutrition and immune cell response as well.

Keyword : immune, cell, response, nutritional, and, clinical, outcome, immune, enhancing, early, enteral, feeding, critically, ill,

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