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Nutritional complete and malnutrition in Pediatric Intensive Care Unit (PICU) children

Background: Supply of nutritional requirements is vital for all patients. Malnutrition brings several disadvantages, namely, increase in the length of hospitalization, immune system dysfunction, loss of muscle mass, and eventually death thus patients of Intensive Care Unit (ICU) need special medical care including nutritional care. This study aimed to evaluate the relationship between dietary supplementation and malnutrition status in PICU children in Iran.

Methods: A case-control study was conducted on 200 patients aged 8–10 years in PICU. Data of two groups including 100 patients (cases) who had consumed regular hospital meals and dietary supplements and 100 patients (controls) who had received regular hospital meals were compared. The dietary supplements that used in this study was Nestle Nutrition Peptamen Junior Powder.

Anthropometric measurements, laboratory values, and dietary intakes were extracted from medical records, and Maastricht index (MI) was calculated. Maastricht index (MI) is one of the best indicators to evaluate nutritional status among the patients. Both anthropometric indicators and biochemical parameters, namely, albumin, prealbumin, and total lymphocyte count (TLC), are involved in MI calculation. The result of this calculation is a score which determines the level of malnutrition in the patient. Scores lower than zero indicate nutritional adequacy while zero and greater values determine the malnutrition status.

Results: There were no significant differences in anthropometric indicators, biochemical parameters, energy intake and the percentage of energy from macronutrients between two groups at the baseline of the study. But daily intake of energy, carbohydrate, and protein of the case group was significantly higher at the end of the study (after 3 weeks). In case group, albumin (35.1 ± 5.5 g/L) and prealbumin (17.9 ± 4.7 mg/L) were significantly higher and TLC (1107.865 ± 881.3 cell/mm³) was significantly lower at the 21th day ($P = 0.01$). MI declined significantly after 3 weeks in both groups with a greater drop in case group (MI: Case group: 3.3 ± 3.9 ; control group: 4.1 ± 3.6 , $P = 0.001$)

Conclusions: Consuming dietary supplements besides the regular hospital meals helped supply nutritional requirements and improved the malnutrition. Also this study showed that Peptamen[®] Junior powder is a good nutritionally complete with 100% whey peptide that can meet the energy needs of paediatric patients with or at risk of malnutrition, such as PICU children.

Speaker Biography

Mehnoosh Samadi has completed her PhD at the age of 32 years from Ahvaz Jundishapur University of Medical Sciences. She is the Assistant Professor of nutritional science department in School of Nutritional Science and Food Technology of Kermanshah University of Medical Sciences, Kermanshah, Iran. She has published more than 10 papers in reputed journals and has been serving as an editorial board member of reputed.

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