Abstract

Introduction: Nutritional support is an essential component in critical care. Malnutrition has been associated with poor outcomes among patients in intensive care units (ICUs), as indicated by increased morbidity, mortality, and length of stay.

Aim of the Work: The aim of this work is to discuss and review the effect of parenteral nutrition versus enteral nutrition on the outcome of patients requiring mechanical ventilation.

Methodology: Nutrition is an important aspect of patient care in acute or chronic critical illness. Appropriate nutritional support during the acute phase of critical illness has the potential to reserve or mitigate adverse consequences of poor nutritional status. An increasing nutritional deficit during a long ICU stay is associated with increased morbidity, infection rate, mechanical ventilation, length of stay, duration of recovery, and costs.

Conclusion: Recent studies mention that In mechanically ventilated patients in the ICU, ventilator-associated pneumonia rates, ICU and hospital lengths of stay, and ICU and hospital mortality rates of patients receiving PN are not significantly different than those in patients receiving EN, and feeding goals can more effectively be attained by PN. Yet, duration of mechanical ventilation is slightly longer in patients receiving PN, and Further studies to support this recommendation should be planned.

Keywords: Parenteral versus Enteral, Nutrition on Outcome, Mechanically Ventilated Patient

Contents

List of Abbreviations

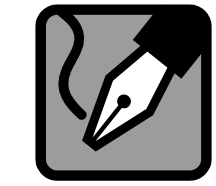
- AA……Amino Acids
- ACTH……...Adrenocorticotropic Hormone
- ATP……..Adenosine Triphosphate
- ARDS……...Acute Respiratory Distress Syndrome
- ACTH……...Adrenocorticotropic hormone
- AGA…….American Gastroenterological Association
- BMI……..Body mass index
- CRP……..C-reactive protein
- CO_2……Carbon dioxide
- CRH…….Corticotropin-releasing hormone
- CRS…….Catheter-related sepsis
- EE……Energy expenditure
- EN…….……...Enteral nutrition
- FFA……..……Free fatty acids
- FDA……..…...Food and Drug Administration
- GH……..….Growth hormone
- GLUT……..…Glucose transporter
- GI……....Gastrointestinal
- GALT…….Gut-associated Lymphoid Tissue
- GRV……...Gastric residual volume
- HPA……..…..Hypothalamic-pituitary adrenal

- H_2O……..…Water
- IIT……..…Intensive insulin therapy
- ICU……..…..Intensive care unit
- IGF-1……..Insulin-like growth factor-1
- IL-1…….…Interleukin-1
- IL-6…….…Interleukin-6
- LH……..…...Luteinizing hormone
- MOD……....Multi-organ dysfunction
- MALT……Mucosa-associated Lymphoid Tissue
- NO……...Nitric oxide
- O_2 ..... Oxygen
- PCM…….Protein-Calorie Malnutrition
- PN……Parenteral nutrition
- PPN……..Peripheral Parenteral Nutrition
- REE……..Resting energy expenditure
- ROS……..Reactive oxygen species
- RBP……..Retinol-binding protein
- SPN……..Supplemental parenteral nutrition
- SNS……..Sympathetic nervous system
- T3……Tri-iodothyronine
- T4……Thyroxine
- TNF……..Tumor necrosis factor
- TPN……..Total Parenteral Nutrition

- TSH……..Thyroxine stimulating hormone
- TSF……...Triceps skin fold
- UUN…….Urinary urea nitrogen
- VO_2.....Whole-body oxygen consumption
- VCO_2.....Whole-body carbon dioxide production

List of Figures

List of Tables



Introduction

Aim of the Work

Chapter (1)

Metabolic and Nutritional Changes in the Critically Ill Patient

Chapter (2)

Nutritional Requirements in Mechanically Ventilated Patient

Chapter (3)

Parenteral and Enteral Nutrition in Mechanically Ventilated Patient and Effect on Outcome

Summary

References