

NUTRITION IN THE CRITICALLY ILL

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The critically ill patient exhibits an endocrine and metabolic response to stress which is characterized by high resting energy expenditure, accelerated proteolysis, lipolysis manifesting with hyperglycemia, a hyperdynamic cardiovascular reaction with a high cardiac output, increased oxygen consumption, high body temperature, and decreased peripheral vascular resistance. Provision of a large glucose-derived calorie load tends to accentuate these reactions and increase the degree of hyperglycaemia. A hypocaloric-hyperproteic regimen which is provided only during the first days of the flow phase of the adaptive response to injury, sepsis, or critical illness is considered best.

Enteral nutrition is indicated when there is an inability to ingest adequate nutrients by mouth and when the gastrointestinal tract is normal. The commonly used polymeric feeding solutions provide a mixture of nutrients similar to that encountered in the normal diet, usually as an iso-osmolar low residue solution. Because lactose intolerance may be encountered during critical illness, most formulations are lactose free.

If gastric emptying is delayed prokinetic agents are tried before a transpyloric tube or enterostomy tube feeding is considered. Diarrhoea caused by enteral pathogens may require specific treatment. If pathogens are excluded then fibre and probiotics may be considered.

Intravenous nutrition plays an important supportive role in critically ill patients who have prolonged gastrointestinal failure. Energy substrates consist of concentrated glucose and lipid solutions and nitrogen requirement is supplied as L-amino acids which is a solution of essential amino acids with a few of the non-essential amino acids. The water soluble vitamins and vitamin K should supplement intravenous nutrition with amounts to meet the recommended daily allowance. Additional supplementation of thiamine, folic acid and ascorbic acid are often administered. Apart from zinc, the body stores of the essential trace elements of copper, iodine, iron, manganese, cobalt, selenium, chromium, fluoride and molybdenum are usually adequate to meet the needs of patients requiring parenteral nutrition for less than 3 months.

Hormonal manipulations and glutamine containing immune enhancing enteral formula have also been used.

Notes: