

Critically ill head injury patients and nutritional issues; need for rural guidelines

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Underfeeding in critically ill patients has been associated with adverse outcomes, increased incidence of infection and may result in longer hospitalization. In these critically ill patients, early and adequate nutritional support can promote healing, decrease physiological stress, and enhance immunocompetence.¹ Most patients with severe traumatic brain injury regain their nutritional independence within the first 6 months after injury, however many may develop signs of malnutrition.² Malnutrition leads to impaired respiratory muscle function, reduction in vital capacity, reduced cardiac contractility, increased thrombogenicity, and impaired renal function. The manifestations of these include hypoventilation, renal failure, non-healing of wounds, emotional and behavioral functional impairment.^{3,4} Gastrointestinal dysfunction occurs frequently in patients with traumatic brain injury.⁵ At times, intolerance to enteral and parenteral nutritional support become more difficult causing fluid overload leading to serious iatrogenic complications such as aspiration pneumonia, and catheter-related infections.⁶ Surgeons must keep close check of nutritional status of head injury patients. It is difficult to handle the nutritional aspects of such care, particularly in rural health centers of developing countries where nutrition experts may not be available. Swallowing abnormalities and oropharyngeal dysphagia may exist in patients who sustain severe head injury and consequent ischaemic injury to the vital cortical centers mostly secondary to herniation syndromes.

The role of aggressive and early nutritional support in patients with severe head injuries is well recognized and patients getting parenteral nutrition have had favourable outcome than patients receiving enteral nutrition.⁷ It has also been suggested that parenteral nutritional support is required following brain injury until enteral nutrition can be tolerated particularly if patients cannot tolerate enteral feeding because of ileus or a high risk of aspiration as for patients with surgical illnesses.^{8,9} Clinical trials have shown that enteral nutrition is equivalent or superior to parenteral nutrition when nutrient intake is controlled.⁸ Early enteral feeding that is within 24 hours of injury has shown benefits over feeding later in the course of hospitalization.¹⁰ Nasogastric feeding is difficult but may be the only option

in settings outside major centers. To overcome complication of aspiration pneumonia, percutaneous endoscopic gastrostomy is recommended. Administration of enteral feedings through a percutaneous gastrostomy, which is performed early after intubation in subjects mechanically ventilated for head injury, is associated with a lower frequency of ventilator-associated pneumonia compared with nutrition through a nasogastric tube.¹¹ "The variety of nutritional and metabolic perturbations following severe head injury necessitates aggressive nutritional support in providing the optimal milieu for neurologic and systemic recovery".¹²

Guidelines regarding nutritional support of such patients should be upgraded, with special emphasis on patients coming from rural areas of developing countries where both expertise and finances are limiting factors.

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