
NUTRITIONAL APPROACH AND TREATMENT IN PATIENTS WITH TRAUMATIC BRAIN INJURY: CASE REPORT

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Background: Traumatic brain injury (TBI) is a complex medical condition that can lead to a myriad of physiological and metabolic changes in the body, including alterations in nutritional status and metabolism (1). TBI disrupts the body's delicate balance, often leading to a hypermetabolic state. This hypermetabolism is characterized by an increased resting energy expenditure, muscle wasting, and changes in body composition, all of which can significantly affect the nutritional status of individuals with TBI (2, 3). Adequate energy intake, macronutrient balance, and micronutrient support, all tailored to the individual needs, are vital for the recovery process.

Aim: To provide an overview of the interplay between TBI and nutritional status, focusing on the impact of TBI on metabolism and the importance of proper nutrition in recovery and rehabilitation; to present the outcome of nutritional management and treatment in a case of a severely malnourished patient with a traumatic brain injury.

Methods: A 38-year-old patient with traumatic brain injury (epidural and subdural hematoma, and cerebral oedema; GCS 10) after a fight in August 2022, was admitted to a comprehensive rehabilitation program at URI Soča on February 27, 2023. Upon admission, the NRS 2002 screening tool indicated high nutritional risk. Based on nutritional history, clinical status, body composition measurements, and functional testing, he met the GLIM criteria for severe malnutrition. Following extensive blood laboratory analysis, due to pronounced malabsorption resulting from malnutrition, we initiated parenteral nutrition. The patient was continuously monitored, including regular assessments of body composition, laboratory parameters, and functional status.

Results: A patient who lost 53% of his before-injury body mass during acute treatment was severely malnourished upon admission to rehabilitation. Due to dysphagia, nutrition was exclusively administered through a PEG tube.

Verbal communication was not possible, and the patient was non-ambulatory. Clinically, spastic tetraparesis with more severe impairment on the left side was present. To prevent refeeding syndrome, we gradually increased the energy and nutrient intake through the PEG tube. Despite sufficient intake, due to malabsorption in the context of malnutrition, central parenteral nutrition was temporarily introduced. At discharge (after 5 months), his body mass was 25 kilograms higher than at admission. He was able to consume all food orally, walked independently, and showed a significant improvement in cognitive function.

Discussion and Conclusions: In conclusion, TBI leads to significant alterations in nutritional status and metabolism, which can impede the recovery process. Comprehensive nutritional assessment and support are and should be essential components of TBI rehabilitation programs. Customized nutritional interventions can aid in optimizing metabolism, minimizing muscle loss, and promoting the overall well-being of individuals recovering from TBI. Further research is necessary to refine nutritional strategies and enhance the care of TBI patients, particularly regarding long-term outcomes and quality of life.

References

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