Tatalaksana medik gizi pada pasien sakit kritis dengan cedera kepala sedang dan berat = Medical nutrition therapy in critically ill patients with moderate and severe traumatic brain injury

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Abstrak

Cedera kepala merupakan penyebab utama kematian dan kecacatan pada populasi dunia berusia di bawah 45 tahun. Cedera kepala sedang (CKS) dan berat (CKB) biasanya memerlukan perawatan intensif dan pendekatan medis-bedah. Pasien dengan cedera kepala mengalami peningkatan laju metabolisme sehingga memerlukan tatalaksana medik gizi yang sesuai. Pemenuhan kebutuhan energi yang tidak adekuat dapat menyebabkan peningkatan angka morbiditas, risiko infeksi, dan komplikasi lainnya. Pemberian nutrisi enteral dini dalam kurun 24-48 jam setelah masuk Intensive Care Unit (ICU) dapat memperbaiki luaran klinis pasca cedera.

Serial kasus ini bertujuan untuk melaporkan peran tatalaksana medik gizi pada status gizi, lama pemakaian ventilator, tingkat kesadaran dan kapasitas fungsional pada pasien kritis dengan CKS dan CKB. Empat pasien laki-laki dengan rentang usia 25-46 tahun diobservasi selama perawatan di ICU RS Cipto Mangunkusumo, dua pasien dengan diagnosis CKS dan sisanya dengan diagnosis CKB. Status gizi berdasarkan indeks massa tubuh, dua pasien memiliki berat badan (BB) normal, satu pasien BB lebih dan satu pasien obesitas II. Tingkat kesadaran berdasarkan skor Glascow Coma Scale (GCS) pasien pada saat masuk ICU adalah 6-11.

Selama perawatan keempat pasien mendapat nutrisi enteral dini dan pemberian nutrisi ditingkatkan bertahap. Pada seluruh pasien, kebutuhan energi dapat dipenuhi sesuai target 25-30 kkal/kg BB. Kebutuhan makronutrien dapat dipenuhi sesuai target, yaitu protein 1,2-2 g/kg BB, lemak 20-30%, dan karbohidrat minimal 100 g/hari. Pada dua pasien dengan CKB, diberikan nutrien spesifik berupa glutamin sebesar 0,2 g/kgBB/hari dan mikronutrien berupa vitamin C, vitamin B kompleks, asam folat, dan seng.

Hingga akhir pemantauan status gizi pada dua pasien CKS dapat dipertahankan, sedangkan dua pasien dengan CKB mengalami penurunan berat badan. Dua pasien CKS hanya menggunakan ventilator selama 4-5 hari, sedangkan dua pasien dengan CKB menggunakan ventilator lebih lama yaitu 12 dan 31 hari dengan disertai komorbiditas pneumotoraks dan ventilator-associated pneumonia. Tingkat kesadaran seluruh pasien mengalami perbaikan. Skor GCS pasien pada akhir perawatan di ICU adalah 7-15. Kapasitas fungsional berdasarkan Indeks Barthel juga mengalami perbaikan pada tiga pasien, yaitu dari ketergantungan total menjadi ketergantungan sedang atau berat.

Dapat disimpulkan bahwa tatalaksana medik gizi dapat berperan dalam mempertahankan status gizi, menurunkan lamanya pemakaian ventilator, memperbaiki tingkat kesadaran dan kapasitas fungsional pada pasien sakit kritis dengan CKB dan CKS. Tingkat keparahan cedera kepala dan komorbiditas dapat memengaruhi luaran klinis dan harus dipertimbangkan dalam memberi tatalaksana medik gizi.

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Traumatic brain injury (TBI) is a leading cause of death and disability in the global population under 45 years old. Moderate and severe TBI usually require intensive care and a medical-surgical approach. Patients with TBI experience an increase in metabolic rate and therefore require appropriate medical nutrition

therapy. Inadequate energy intake can cause an increase in morbidity, risk of infection, and other complications. Early enteral nutrition within 24-48 hours after ICU admission has been shown to improve clinical outcome.

This case series aims to report the role of medical nutrition therapy on nutritional status and clinical outcomes of critically ill patients with moderate and severe TBI. Four male patients aged 25-46 years were observed during their stay at the ICU of Cipto Mangunkusumo Hospital. Based on body mass index, two patients were normoweight, one patient was overweight and one patient was class II obese. The Glascow Coma Scale (GCS) scores of the patients on ICU admission were ranged 6-11.

Two of the four patients were classified as moderate TBI and the other two patients were as classified as severe TBI. On monitoring four patients received early enteral nutrition and the nutrition was gradually increased to reach the target of 25-30 kcal/kg body weight (BW). Enteral formula were targeted to achieve protein intake of 1.2-2 g/kgBW, fat intake of 20-30% of energy intake, and carbohydrate intake of at least 100 g/day. Two patients with severe TBI were given specific nutrients in the form of glutamine as much as 0.2 g/kgBW/day and micronutrients in the form of vitamin C, vitamin B complex, folic acid, and zinc. Two patients with moderate TBI received mechanical ventilation for 4 and 5 days, while two patients with severe TBI received mechanical ventilation for 12 and 31 days. In two patients with severe TBI, prolonged use of mechanical ventilation may be associated with the comorbidities of pneumothorax and ventilator-associated pneumonia.

At the end of monitoring, the levels of consciousness were improved in all patients. The patients GCS score at the end of treatment in the ICU were ranged 7-15. Functional capacity based on the Barthel Index also improved in three patients, from total dependence to moderate or severe dependence. Weight loss was experienced in two patients with severe TBI, possibly due to severe and prolonged catabolism in severe TBI. Patients with severe TBI may have higher energy requirements to maintain their nutritional status.

It can be concluded that medical nutrition therapy may play a role in improving the level of consciousness and functional capacity in critically ill patients with moderate and severe traumatic brain injury.