Terapi medik gizi pada pasien luka bakar berat: peran pemberian vitamin D = Medical nutritional therapy in severe burns patients: role of vitamin D supplementation

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Abstrak

Latar Belakang: Pada luka bakar terjadi peningkatan respon inflamasi. Peningkatan c-reactive protein (CRP) pada luka bakar merupakan penanda inflamasi sistemik. Kadar vitamin D yang rendah banyak ditemukan pada pasien luka bakar dan berhubungan dengan luaran klinis yang buruk. Vitamin D memiliki efek memodulasi imun dan antiinflamasi. Metode: Serial kasus ini terdiri dari 4 pasien luka bakar berat karena ledakan gas dan api yang dirawat di ULB pada periode Januari hingga Mei 2022. Terapi medik gizi yang diberikan berupa nutrisi enteral dini, kemudian ditingkatkan secara bertahap sesuai toleransi dan klinis pasien, hingga kebutuhan energi total (berdasarkan formula Xie), target protein 1,5-2 g/kg BB/hari, lemak 25-30%, dan karbohidrat 55-60%. Keempat pasien serial kasus diberikan suplementasi vitamin D dan dilakukan pemeriksaan kadar vitamin D sebelum dan sesudah suplementasi, serta pemeriksaan kadar CRP. Hasil: Keempat pasien serial kasus selama perawatan telah mencapai kebutuhan makronutrien sesuai target, meskipun terdapat fluktuasi asupan karena adanya perburukan kondisi klinis atau tindakan operasi/perawatan luka. Keempat pasien serial kasus memiliki kadar vitamin D yang rendah, namun mengalami peningkatan dengan suplementasi. Kadar CRP juga diperoleh meningkat dan mengalami penurunan dengan meningkatnya kadar vitamin D, yang menyebabkan hambatan produksi sitokin proinflamasi dan jalur NF-kB, selain adanya terapi pembedahan dan antibiotik. Keempat pasien serial kasus diperbolehkan rawat jalan pada akhir perawatan. Kesimpulan: Pada serial kasus ini, semua pasien luka bakar dengan kadar vitamin D yang rendah memiliki kondisi inflamasi yang tinggi ditandai dengan peningkatan CRP. Pemberian suplementasi vitamin D menyebabkan peningkatan kadar vitamin D dan turut berperan dalam penurunan CRP, selain adanya terapi pembedahan dan antibiotik

.....Background: Burns induce an increased inflammatory response. Elevated c-reactive protein (CRP) is a marker of systemic inflammation in burns. Low vitamin D levels are common in burn patients and are associated with poor clinical outcomes. Vitamin D has immune-modulating and anti-inflammatory effects. Method: The case series was held in the burn unit Dr. Cipto Mangunkusumo Hospital from January to May 2022, involving 4 severe burn patients due to gas explosions and fire. Nutritional medical therapy was given in the form of early enteral nutrition, then gradually increased according to patient tolerance and clinical, up to total energy requirements (based on Xie's formula), the target protein is 1.5-2 g/kg BW/day, 25-30% fat and 55-60% carbohydrates. Vitamin D supplementation was given and vitamin D levels were measured before and after supplementation, CRP levels were also measured. Result: All case series patients during treatment had achieved the target macronutrient requirements, despite fluctuations of intake due to clinical deterioration or surgical procedure or wound care. All patients had low vitamin D levels but increased with supplementation. CRP levels also increased and decreased with increasing vitamin D levels, leading to inhibition of inflammatory cytokines production and the NF-kB pathway, besides surgical and antibiotics therapy. All patients were allowed outpatient treatment at the end of treatment. Conclusion: This case series exhibited low level of vitamin D in burn patients accompanied with elevated CRP level indicating high

inflammatory condition. Vitamin D supplementation causes an increase in vitamin D levels and may contribute to decreasing CRP levels, in addition to surgical and antibiotic therapy.