ABSTRAK

Latar Belakang: *Muscle wasting* merupakan masalah umum yang terjadi di *Intensive Care Unit* (ICU). M*uscle wasting* pada sakit kritis dilihat dari dua perspektif, yaitu asupan nutrisi yang inadekuat dan katabolisme akibat stres. *Modified Nutrition Risk in the Critically Ill* (NUTRIC) *Score* merupakan alat skrining yang merepresentasikan model yang mengukur faktor *starvation*, inflamasi, severitas penyakit, dan disfungsi organ. Asupan nutrisi dan protein diharapkan mampu menurunkan kehilangan otot akibat penggunaan cadangan protein tubuh. Hubungan antara kekuatan otot dengan ketebalan otot menyebabkan evaluasi tebal otot dipercaya cukup relevan karena dianggap merefleksikan kekuatan otot.

Metode: Penelitian analitik observasional pada 30 pasien kritis yang dirawat di Ruang Observasi Intensif di IGD RSUD Dr Soetomo Surabaya. Pemantauan ketebalan otot quadriceps femoris dilakukan dengan USG pada hari pertama perawatan dan dievaluasi pada hari ke-3, ke-5, ke-7. Asupan nutrisi dipantau selama 1 minggu perawatan dihitung jumlah utang kalori dan protein.

Hasil: Terdapat hubungan antara mNUTRIC Score dengan tebal otot quadriceps femoris pada hari ke-3, ke-5 dan ke-7. Pada perbandingan antara kelompok dengan risiko rendah dengan kelompok risiko tinggi didapatkan bahwa terdapat perbedaan rata-rata perubahan persentase selisih tebal otot yang bermakna pada pengamatan hari ke-3 (-2.751 ± 0.443 vs -4.315 ± 0.661), ke-5 (-3.485 ± 1.051 vs -5.315 ± 0.705), dan ke-7 (-3.867 ± 0.847 vs -7.103 ± 0.787). Tidak didapatkan hubungan antara utang kalori dengan perubahan persentase selisih tebal otot. Pada pengamatan hari ke-7 didapatkan hubungan yang bermakna antara utang protein dengan ketebalan otot quadriceps femoris ($p = 0,008$) dengan korelasi positif dengan kekuatan korelasi sedang ($r = 0,477$).

Kesimpulan: Modified NUTRIC Score memiliki hubungan dengan ketebalan otot quadriceps femoris hari ke-3,5, dan 7 pada pasien kritis. Asupan protein memiliki hubungan dengan ketebalan otot quadriceps femoris hari ke-7 pada pasien kritis.

Kata kunci: *Modified* NUTRIC *Score*, Nutrisi, Tebal Quadriceps Femoris

ABSTRACT

Background: Muscle wasting is a common problem that occurs in the Intensive Care Unit (ICU). Muscle wasting in critical illness is seen from two perspectives, inadequate nutrition intake and stress catabolism. Modified Nutrition Risk in the Critically Ill (NUTRIC) Score is a screening tool that represents a model that measures starvation, inflammation, disease severity, and organ dysfunction. Nutrient and protein intake is expected to reduce muscle loss due to the use of body protein reserves. The relationship between muscle strength and muscle thickness causes the evaluation of muscle thickness to be believed to be quite relevant because it is thought to reflect muscle strength.

Methods: Observational analytic study was conducted on 30 critical patients in the Intensive Observation Room at the IGD Dr Soetomo Hospital Surabaya. Patient's quadriceps femoris muscle thickness will be monitored with USG on the first day of treatment and evaluated on days 3, 5, 7. Nutrition intake will be monitored for 1 week of treatment, the amount of calories and protein debt will be monitored during the observational period.

Result: There is a relationship between mNUTRIC Score with quadriceps femoris muscle thickness on days 3, 5 and 7. In the comparison between the low risk group and the high risk group it was found that there was a significant difference in the change in the percentage of significant muscle thickness difference on the 3rd day observation (-2.751 ± 0.443 vs -4.315 ± 0.661), the 5th (-3.485 ± 1,051 vs -5,315 ± 0,705), and the 7th (-3,867 ± 0.847 vs -7,103 ± 0.787). There is no relationship between calorie debt and the percentage change in muscle thickness difference. On observation day 7 found a significant relationship between protein debt with quadriceps femoris muscle thickness ($p = 0.008$) with a positive correlation with moderate correlation strength ($r = 0.477$).

Conclusion: Modified NUTRIC Score has a relationship with quadriceps femoris muscle thickness of days 3,5, and 7 in critical patients. Protein intake has a relationship with the thickness of the quadriceps femoris muscle day 7 in critical patients.

Keywords: Modified NUTRIC Score, Nutrition, Quadriceps Femoris muscle mass