

# EFEK PEMBERIAN SUPLEMEN NUTRISI ORAL PADA PASIEN TUBERKULOSIS RESISTAN OBAT DENGAN MALNUTRISI DI POLIKLINIK RSUP PERSAHABATAN = The efficacy of oral nutritional supplements to drug-resistant tuberculosis patients with malnutrition at Persahabatan Hospital

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## Abstrak

**Latar Belakang:** Malnutrisi merupakan salah satu prediktor luaran pengobatan yang buruk. Indeks masa tubuh (IMT) kurang 18,5 kg/m<sup>2</sup> dan ketidakcukupan peningkatan berat badan saat pengobatan berkaitan dengan peningkatan risiko kegagalan pengobatan kematian dan kekambuhan TB. Intervensi gizi tinggi energi dan protein dapat memperbaiki malnutrisi sehingga memperbaiki imunitas, kekuatan otot dan mempercepat konversi.

**Metode:** Penelitian ini merupakan open label non-randomised clinical trial dan merupakan merupakan uji pendahuluan. Penelitian ini dilakukan di poliklinik MDR RSUP Persahabatan periode April-Desember 2022 pada pasien TB resistan obat (RO) yang mengalami malnutrisi. Kelompok intervensi mendapatkan edukasi gizi dan suplementasi nutrisi oral tinggi energi dan protein (705 kkal dan 31 gram per hari) selama 60 hari sedangkan kelompok kontrol hanya mendapat edukasi gizi selanjutnya dievaluasi perubahan berat badan, waktu konversi, perubahan keluhan dan parameter hematologi.

**Hasil:** Didapatkan 36 pasien kelompok intervensi dan 34 pasien kontrol. Pemberian suplementasi nutrisi meningkatkan asupan energi total dan protein harian [2012 vs 1596 kkal,  $p < 0,001$ ; 79 vs 58gram,  $p < 0,001$ ] dan meningkatkan berat badan 5% pada kelompok intervensi dibandingkan kontrol [OR:14,518 95%IK (3,778-55,794),  $p < 0,001$ ]. Kelompok intervensi (86,1%) mengalami waktu konversi pada bulan ke-2 dibandingkan kelompok kontrol 70,6% ( $p < 0,114$ ). Perbaikan keluhan batuk dan sesak napas pada kelompok intervensi dibandingkan kontrol [ $p < 0,001$  (batuk) dan  $p < 0,001$  (sesak)]. Terdapat perbedaan penurunan kadar protein total dan globulin pada kedua kelompok [ $p:0,038$  (protein total) dan  $p:0,02$  (globulin)] pascaintervensi. Protein total dan globulin merupakan reaktan fase akut sebagai petanda inflamasi dan berguna untuk evaluasi respons pengobatan TB dan intervensi nutrisi. Hasil analisis multivariat mendapatkan bahwa pasien dengan penurunan berat badan derajat sedang-berat sebelum pengobatan TB RO akan memiliki kenaikan berat badan 5% [aOR: 4,701 95%IK (1,334-16,569),  $p < 0,001$ ], sedangkan pasien yg memiliki keluhan sesak saat aktivitas sebelum pengobatan akan memiliki kesulitan naik berat badan 5% setelah dua bulan pengobatan [aOR:0,168 95%IK (0.043-0.797),  $p:0,074$ ].

**Kesimpulan:** Intervensi gizi pada pasien TB RO dengan malnutrisi merupakan pendekatan terbaru untuk membantu keberhasilan pengobatan.

.....Background: Malnutrition is a predictor of poor treatment outcomes. Body mass index (BMI) less than 18.5 kg/m<sup>2</sup> and inadequate weight gain during treatment are associated with an increased risk of treatment failure, death and recurrence. Nutritional intervention with high energy and protein can correct malnutrition thereby improving immunity, muscle strength and accelerating conversion.

**Methods:** This study is an open clinical trial design and is a preliminary test. This research was conducted at the MDR polyclinic at Persahabatan Hospital through the April-December 2022 of malnourished drug

resistance (DR)-TB patients. The intervention group received nutrition education and high energy and protein oral nutritional supplementation (705 kcal and 31gr per day) for 60 days while the control group only received education. This study is to evaluate body weight, conversion time rate, changes in complaints and hematological parameters.

Results: There were 36 patients in the intervention group and 34 control patients. Providing nutritional supplementation increased total energy and daily protein intake [2012 vs 1596 kcal  $p<0.001$ ; 79 vs 58 gr,  $p<0.001$ ] and increased body weight 5% in the intervention group compared to the control [OR:14.518 95% CI (3.778-55.794),  $p<0.001$ ]. The intervention group (86.1%) experienced conversion time in the 2nd month compared to the control group 70.6% ( $p<0.114$ ). Improvements in complaints of cough and shortness of breath in the intervention group compared to controls ( $p<0.001$  and  $p<0.001$ ). There were differences in the decrease in total protein and globulin levels in the two groups ( $p:0.038$  and  $p:0.02$ ) after the intervention. Total protein and globulin are acute phase reactants as markers of inflammation and are useful for evaluating response to treatment. The results of the multivariate analysis found that patients with moderate-to-severe weight loss before DR-TB treatment would have a weight gain of 5% [aOR: 4.701 95% CI (1.334-16.569),  $p<0.001$ ], whereas patients who had shortness of breath when active before treatment will have difficulty gaining weight 5% after two months of treatment [aOR:0.168 95% CI (0.043-0.797),  $p:0.074$ ].

Conclusion: Nutritional intervention in malnourished DR-TB RO is the latest approach to assist in successful treatment.