Korelasi antara asupan protein, massa bebas lemak dan hitung limfosit total dengan kualitas hidup pasien tuberkulosis paru fase intensif = Correlation between protein intake, fat free mass, and total lymphocyte count with quality of life in patients pulmonary tuberculosis undergoing intensive phase treatment

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Abstrak

Malnutrisi dan Tuberkulosis (TB) memiliki hubungan bidireksional, dimana saling berinteraksi satu sama lain. Pada kondisi infeksi kronis, terjadi ketidakseimbangan antara pemecahan protein dan sintesis protein yang ditandai dengan menurunnya massa bebas lemak. Malnutrisi juga menyebabkan atrofi timus sehingga terjadi penurunan proliferasi limfosit. Kondisi malnutrisi pada pasien TB akan menurunkan kualitas hidup. Kualitas hidup yang baik akan meningkatkan keberhasilan pengobatan, menurunkan mortalitas dan morbiditas. Short Form-36 (SF-36) merupakan kuesioner untuk menilai kualitas hidup yang dapat menilai 2 komponen yaitu komponen fisik (PCS) dan mental (MCS). Penelitian potong lintang ini bertujuan untuk menilai hubungan asupan protein, massa bebas lemak dan hitung limfosit total dengan kualitas hidup pada pasien TB paru fase intensif di 12 puskesmas yang dipilih secara random di Kota Pekanbaru, Riau. Pengambilan sampel dilakukan secara consecutive sampling, dan didapatkan 72 subjek yang memenuhi kriteria penelitian. Hasil penelitian didapatkan nilai tengah usia adalah 33 tahun dengan usia terendah 18 tahun dan tertinggi 59 tahun. Sebanyak 56,9% subjek adalah laki-laki, sebagian besar berpendidikan menengah dengan pendapatan kurang, perokok aktif dan dengan status gizi kurang (underweight). Sebanyak 59,7% subjek memiliki asupan protein yang kurang, 86,1% dengan massa bebas lemak yang rendah, dan 88,9% subjek memiliki hitung limfosit yang normal. Sebagian besar subjek memiliki kualitas hidup PCS dan MCS yang baik. Hasil penelitian menunjukkan terdapat korelasi dengan kekuatan lemah yang bermakna secara statistik antara massa bebas lemak dengan PCS (r = 0,239, p = 0,044), sedangkan asupan protein dan hitung limfosit total tidak ditemukan adanya korelasi baik terhadap PCS maupun MCS.
.....Introduction: Malnutrition and Tuberculosis (TB) have bidirectional relationship, which interact between each other. In chronic infection, there is an imbalance between protein degradation and protein synthesis which marked with the loss of fat free mass (FFM). Malnutrition can cause the atrophy of thymus gland resulted in the reduction of lymphocyte production. Malnutrition in TB patients will reduce quality of life. On the other hand, a good quality of life will increase treatment success rate and decrease the risk of morbidity and mortality. Short Form-36 (SF-36) is a questionnaire used to assess quality of life consists of two different components, physical component score (PCS) and mental component score (MCS).
Methods: This cross-sectional study aimed to assess correlation between protein intake, fat free mass, and total lymphocyte count with quality of life among intensive phase lung tuberculosis patients. Data collected from May to July 2019 in 12 primary health centers chosen randomly in Pekanbaru, Riau Province. Samples selected using consecutive sampling method and 72 subjects fulfilled all research criteria. Interview was used to collect basic characteristic data, dietary intake data, and quality of life score. Anthropometric measurement (body weight, body height, and fat free mass) and laboratory examination (total lymphocyte count) were done. Spearman, Pearson, Mann-Whitney, and Kruskall Wallis test were used in this study.

Results: Research showed median age subjects was 33 years old (18-59 years old). Most of the subjects were male (56.9%), had middle level of education, had low income, were active smoker with underweight nutritional status. Around 59.7% subjects had low protein intake, 86.1% subjects had low fat free mass, and 88.9% subjects had normal lymphocyte count. Most of the subjects had good physical and mental component score of quality of life assessment.
Conclusion: There was a statistically significant weak correlation between fat free mass with PCS ($r = 0.239$, $p = 0.044$). However, there was no correlation found between protein intake or total lymphocyte count with PCS or MCS.