

## HUBUNGAN ASUPAN ENERGI DAN PROTEIN TERHADAP INDEKS MASSA OTOT RANGKA PASIEN KANKER YANG MENJALANI RADIOTERAPI DI RSUP DR. SARDJITO YOGYAKARTA

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### INTISARI

**Latar Belakang:** Kanker merupakan penyakit yang banyak terjadi di masyarakat baik di Indonesia maupun dunia. Perawatan yang dijalani pasien seperti radioterapi dan *concurrent chemoradiotherapy* (CCRT) dapat menyebabkan efek buruk seperti mukositis, penurunan asupan, dan kehilangan berat badan karena rendahnya massa otot. Massa otot yang rendah merupakan salah satu kriteria diagnosis untuk kaheksia kanker yang dihubungkan dengan peningkatan toksisitas, morbiditas, maupun mortalitas pada pasien kanker.

**Tujuan:** Mengetahui hubungan antara asupan energi dan protein terhadap indeks massa otot rangka pasien kanker yang menjalani radioterapi di RSUP Dr. Sardjito Yogyakarta.

**Metode:** Penelitian ini merupakan penelitian observasional dengan rancangan prospektif longitudinal. Penelitian ini melibatkan 62 orang pasien kanker yang menjalani radioterapi di RSUP Dr. Sardjito. Dalam 3 minggu pemantauan, penilaian asupan energi dan protein menggunakan *food recall*, serta pengukuran massa otot rangka menggunakan *Bioelectrical Impedance Analysis* dilakukan satu minggu sekali sebanyak 3 kali. Uji korelasi Pearson digunakan untuk melihat hubungan asupan energi dan protein dengan indeks massa otot rangka pada pasien kanker yang menjalani radioterapi.

**Hasil:** Tidak terdapat hubungan yang bermakna antara asupan energi ( $p=0,136$ ) terhadap indeks massa otot rangka, namun terdapat hubungan yang bermakna antara asupan protein ( $p=0,029$ ) terhadap indeks massa otot rangka pada pasien kanker dengan radioterapi termasuk CCRT. Rata-rata pada sebagian besar asupan energi maupun asupan protein subjek selama 3 minggu masih belum memenuhi kebutuhan subjek. Sebagian besar subjek memiliki indeks massa otot rangka yang rendah, baik pada subjek laki-laki maupun subjek perempuan.

**Kesimpulan:** Tidak terdapat hubungan yang bermakna antara asupan energi ( $p=0,136$ ) terhadap indeks massa otot rangka, namun terdapat hubungan yang bermakna antara asupan protein ( $p=0,029$ ) terhadap indeks massa otot rangka.

**Kata Kunci:** Asupan Energi, Asupan Protein, Indeks Massa Otot Rangka, Radioterapi, Kanker.

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**THE RELATIONSHIP OF ENERGY AND PROTEIN INTAKE TO SKELETAL  
MUSCLE MASS INDEX OF CANCER PATIENTS UNDERGOING  
RADIOTHERAPY AT RSUP DR. SARDJITO YOGYAKARTA**

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**ABSTRACT**

**Background:** Cancer is a disease that often occurs in society both in Indonesia and the world. Treatment in patients such as radiotherapy and concurrent chemoradiotherapy (CCRT) can cause adverse effects on patients such as mucositis, decreased intake, and weight loss due to low muscle mass. Low muscle mass is one of the diagnostic criteria for cancer cachexia which is associated with increased toxicity, morbidity, and mortality in cancer patients.

**Objective:** Knowing the relationship between energy and protein intake on skeletal muscle mass index of cancer patients undergoing radiotherapy at RSUP Dr. Sardjito Yogyakarta.

**Method:** This study is an observational study with a longitudinal prospective design. This study involved 45 cancer patients who underwent radiotherapy at Dr. Sardjito. Within 3 weeks of monitoring, assessment of energy and protein intake using food recall, as well as measurement of skeletal muscle mass using Bioelectrical Impedance Analysis was carried out once a week 3 times. Pearson correlation test was used to determine the relationship between energy and protein intake and skeletal muscle mass index in cancer patients undergoing radiotherapy.

**Results:** There is no significant relationship between energy intake ( $p=0,136$ ) and skeletal muscle mass index, but there is a significant relationship between protein intake ( $p=0,029$ ) and skeletal muscle mass index in cancer patients with radiotherapy including CCRT. The average of most of the subject's energy intake and protein intake for 3 weeks still did not meet the needs of the subject. Most of the subjects had a low skeletal muscle mass index, both male and female subjects.

**Conclusion:** There was no significant relationship between energy intake ( $p=0,136$ ) and skeletal muscle mass index, but there was a significant relationship between protein intake ( $p=0,029$ ) and skeletal muscle mass index.

**Keywords:** Energy Intake, Protein Intake, Skeletal Muscle Mass Index, Radiotherapy, Cancer.

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