

INTISARI

PENGARUH PEMBERIAN KOMBINASI BOLU KACIDE TINGGI BCAA DAN SUPLEMEN MAGNESIUM TERHADAP PERSENTASE MASSA OTOT DAN PERSENTASE MASSA LEMAK

KAJIAN PADA ATLET PENCAK SILAT PPLP DAN PAB DIY

Ayudiva Rizky A.¹, Mirza Hapsari STP², Harry Freitag LM²

Latar Belakang: Magnesium dan BCAA diketahui berperan penting dalam sistem muskuloskeletal tubuh dan menunjang performa atlet. Salah satu alternatif suplementasi BCAA berbasis pangan lokal telah dikembangkan dalam bentuk bolu berbahan dasar tepung KACIDE (kapri, kecipir, tempe kedelai). Penelitian terdahulu telah menguji kandungan zat gizi, daya terima produk, serta efek terhadap pembentukan otot, namun belum didapatkan hasil pembentukan otot yang maksimal serta belum disertai dengan penelitian terkait efek suplementasi magnesium terhadap pembentukan otot.

Tujuan Penelitian: Penelitian ini bertujuan untuk mengetahui pengaruh pemberian bolu KACIDE dan suplemen magnesium terhadap persentase massa otot dan persentase massa lemak atlet pencak silat.

Metode: Metode yang digunakan dalam penelitian ini adalah kuasi eksperimental dengan desain crossover. Subjek penelitian (n=8) dibagi ke dalam dua kelompok yaitu kelompok yang diberikan bolu KACIDE saja (kontrol) serta kelompok yang diberikan bolu KACIDE dan suplemen magnesium (intervensi). Latihan fisik dilakukan sebanyak 12 sesi dengan frekuensi tiga kali per minggu dan intervensi diberikan 30 menit sebelum latihan fisik. Subjek penelitian kemudian menjalani periode washout selama 30 hari kemudian dilanjutkan dengan proses crossover selama 12 sesi.

Hasil: Tidak terdapat perubahan yang signifikan pada persen otot total, otot *trunk*, otot *arms*, dan otot *legs* setelah diberikan perlakuan baik pada kelompok kontrol maupun intervensi ($p > 0,05$). Tidak terdapat perbedaan yang signifikan pada selisih persen otot sebelum dan sesudah latihan pada persen otot total ($p 0,439$), otot *trunk* ($p 0,409$), otot *arms* ($p 0,906$), dan otot *legs* ($p 0,479$) antara kelompok kontrol dan intervensi. Tidak terdapat perubahan yang signifikan pada persen lemak total, lemak *trunk*, lemak *arms*, dan lemak *legs* setelah diberikan perlakuan baik pada kelompok kontrol maupun intervensi ($p > 0,05$). Tidak terdapat perbedaan selisih persen lemak sebelum dan sesudah latihan pada persen lemak total ($p 0,916$), lemak *trunk* ($p 0,874$), lemak *arms* ($p 0,356$), dan lemak *legs* ($p 0,425$) antara kelompok kontrol dan intervensi.

Kesimpulan: Tidak terdapat perubahan yang signifikan pada persen otot total dan persen lemak total setelah diberikan kombinasi bolu KACIDE dan suplemen magnesium

Kata kunci: BCAA, magnesium, persen massa otot, persen massa lemak, pencak silat

1. Mahasiswa Program Studi Gizi Kesehatan FK-KMK UGM
2. Dosen Program Studi Gizi Kesehatan FK-KMK UGM

ABSTRACT

THE EFFECT OF KACIDE CAKE HIGH IN BRANCHED-CHAIN AMINO ACID AND MAGNESIUM SUPPLEMENTATION ON MUSCLE MASS PERCENTAGE AND FAT MASS PERCENTAGE

A STUDY IN PENCAK SILAT PAB AND PPLP DAERAH ISTIMEWA YOGYAKARTA ATHLETES

Ayudiva Rizky A.¹, Mirza Hapsari STP², Harry Freitag LM²

Background: Magnesium and BCAA is known to play an important role in the musculoskeletal system and supports athlete performance. An alternative to local food-based BCAAs supplementation is KACIDE cake made from KACIDE flour (kapri, kecipir, tempe kedelai). Previous studies have been conducted to analyze the nutritional content, the acceptability of the product, and its effect on muscle hypertrophy. However, research hasn't been carried out yet on the effects of giving the combination of KACIDE cake and magnesium supplements on muscle hypertrophy.

Objective: The aim of this study is to investigate the effect of giving the combination of KACIDE cake and magnesium supplements on muscle mass percentage and fat mass percentage of pencak silat athletes.

Design: This study is a quasi experimental study with crossover design. Subjects (n=8) were divided into 2 groups, control group (KACIDE cake and placebo) and intervention group (KACIDE cake and magnesium supplement). Physical exercises were given within 12 sessions with the frequency of three times a week and the interventions were given 30 minutes before exercise. After the first period of treatment (12 sessions), subjects then underwent a washout period (30 days) and continued with the crossover period for 12 sessions.

Results: There were no significant changes in the percentage of total muscle, trunk muscle, arms muscle, and legs muscle after being treated both in the control and intervention groups ($p > 0,05$). There were no significant differences in the difference of the percentage of total muscle ($p 0,439$), trunk muscle ($p 0,409$), arms muscle ($p 0,906$), and legs muscle ($p 0,479$) before and after treatment between control group and intervention group. There were no significant changes in the percentage of total fat, trunk fat, arms fat, and legs fat after being treated both in the control and intervention groups ($p > 0,05$). There were no significant differences in the difference of the percentage of total fat ($p 0,916$), trunk fat ($p 0,874$), arms fat ($p 0,356$), and legs fat ($p 0,425$) before and after treatment between control group and intervention group.

Conclusions: There were no significant changes in the percentage of total muscle mass and total fat mass after the intervention was given in the form of a combination of KACIDE cake and magnesium supplements.

Keywords: BCAA, magnesium, muscle mass percentage, fat mass percentage, pencak silat

-
1. Undergraduate student of Nutrition and Health Department, FK-KMK UGM
 2. Lecturer of Nutrition and Health Department, FK-KMK UGM