# Pengaruh pemberian kreatin monohidrat terhadap kadar malondialdehida plasma pasca latihan lari sprint penelitian pendahuluan pada atlet laki laki lari jarak pendek = Effect of creatine monohydrate supplementation on plasma malondialdehyde level after sprint running pilot study in male short distance runner

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Abstrak

Uji klinis paralel alokasi acak tersamar ganda ini bertujuan untuk mengetahui pengaruh pemberian kreatin monohidrat sebesar 20 gram/hari selama 7 hari berturut-turut terhadap kadar malondialdehida (MDA) plasma pasca latihan lari sprint pada atlet laki-laki lari jarak pendek (100 dan 200 meter), usia 18-25 tahun. Sejumlah 20 subyek dipilih dan dibagi menjadi dua kelompok dengan randomisasi blok, 10 subyek kelompok perlakuan (KP) dan 10 subyek kelompok kontrol (KK). Subyek KP mendapat kreatin monohidrat 20 gram/hari + maltodekstrin 50 gram/hari, sedangkan subyek KK mendapat maltodekstrin 50 gram/hari. Data yang diambil meliputi usia, indeks massa tubuh (IMT), massa lemak (ML), massa bebas lemak (MBL), cairan tubuh total (CTT), asupan energi, karbohidrat, protein, kreatin, karotenoid, vitamin C, vitamin E, dan kadar MDA plasma. Pemeriksaan kadar MDA plasma dilakukan sebelum dan setelah periode perlakuan. Analisis data menggunakan uji t tidak berpasangan dan uji Mann-Whitney dengan batas kemaknaan 5%. Analisis lengkap dilakukan pada 20 subyek yaitu 10 subyek KP [usia 18,50 (18,00-19,00 tahun)] dan 10 subyek KK [usia 18,00 (18,00-24,00 tahun)]. Kadar MDA plasma sebelum perlakuan pada KP dan KK adalah 0,32 ± 0,11 M dan 0,33 ± 0,10 M (p = 0,95). Kadar MDA plasma setelah perlakuan lebih rendah pada KP dibandingkan KK, yaitu KP 0,32 ± 0,11 M dan KK 0,34 ± 0,13 M (p = 0,66). Perbedaan perubahan kadar MDA plasma pada KP 0,00 ± 0,16 M dan KK 0,01 ± 0,17 M (p = 0,83). Tidak terdapat perbedaan signifikan perubahan kadar MDA plasma setelah pemberian kreatin monohidrat 20 gram/hari pada KP dibandingkan KK. Penelitian ini belum dapat membuktikan pengaruh pemberian kreatin monohidrat 20 gram/hari selama 7 hari berturut-turut dalam menurunkan kadar MDA plasma pasca latihan lari sprint pada atlet laki-laki lari jarak pendek.

.....This parallel double-blind randomized clinical trial aims to investigate the effect of 20 gram/day creatine monohydrate supplementation for 7 days on plasma malondialdehyde (MDA) level after sprint running in male short-distance runner (100 and 200 meter) aged 18-25 years. A total of 20 subjects were selected and randomly allocated to one of two groups using block randomization, 10 subjects for treatment group (TG) and 10 subjects for control group (CG). The TG received 20 gram/day creatine monohydrate + maltodextrin 50 gram/day, and the CG received 50 gram/day maltodextrin. Data were collected in this study included age, body mass index (BMI), fat mass (FM), fat free mass (FFM), total body water (TBW), intake of energy, carbohydrate, protein, creatine, carotenoid, vitamin C, vitamin E, and plasma MDA level. Assessment of plasma MDA level was carried out before and after supplementation.

Statistical analyses included independent t-test and Mann-Whitney test with significance level was 5%. Twenty subjects completed this study, 10 subjects in TG [aged 18.50 (18.00-19.00) years] and 10 subjects in CG [aged 18.00 (18.00-24.00) years]. Plasma MDA levels before treatment were 0.32 ± 0.11 M for TG and 0.33 ± 0.10 M for CG (p = 0.95), respectively plasma MDA levels after treatment for TG was lower than

CG; 0.32 ± 0.11 M and 0.34 ± 0.13 M (p = 0.66). The difference of plasma MDA level for TG was 0.00 ± 0.16 M and CG was 0.01 ± 0.17 M (p = 0.83). No statistically significant difference was found after 20 gram/day creatine monohydrate supplementation between 2 groups. This study has not proven yet the effect of 20 gram/day creatine monohydrate for 7 days in decreasing plasma MDA level after sprint running in male short-distance runner.