Pengaruh suplementasi serat larut dan diet rendah kalori seimbang terhadap kadar kolesterol low-density lipoprotein serum pada obes i = Effect of soluble fiber supplementation and low calorie balanced diet on serum low-density lipoprotein cholesterol level in obese i / Lily Indriani Octovia

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Abstrak

ABSTRAK
Uji klinis acak tersamar ganda paralel ini merupakan penelitian pendahuluan, bertujuan mengetahui pengaruh suplementasi serat larut dan diet rendah kalori seimbang (DRKS) selama 4 minggu terhadap kadar kolesterol low-density lipoprotein (LDL) serum pada obes I usia 30−50 tahun. Sejumlah 31 subyek dipilih dengan kriteria tertentu dan dibagi menjadi dua kelompok dengan randomisasi blok, 15 orang kelompok perlakuan (KP) dan 16 orang kelompok kontrol (KK). Subyek KP mendapat serat larut psyllium husk (PH) 8,4 g/hari dan DRKS 1200 kkal/hari, sedangkan subyek KK mendapat plasebo dan DRKS 1200 kkal/hari. Data terdiri atas usia, indeks massa tubuh (IMT), asupan zat gizi, serta kadar kolesterol LDL serum. Pemeriksaan kolesterol LDL dilakukan pada awal dan akhir penelitian. Analisis data menggunakan uji t tidak berpasangan dan Mann-Whitney, batas kemaknaan 5%. Karakteristik data dasar dan sebaran subyek kedua kelompok sebanding. Analisis lengkap dilakukan pada 28 subyek (KP dan KK masing-masing 14 subyek). Suplementasi ditoleransi baik dan tidak ditemukan efek samping serius. Median usia subyek KP dan KK berturut-turut 35,0 (30−45) tahun dan 34,50 (30−48) tahun serta rerata IMT 28,0 ± 1,1 kg/m2 dan 27,2 ± 1,4 kg/m2. Rerata kadar kolesterol LDL serum awal KP 137,0 ± 37,0 mg/dL dan KK 134,4 ± 29,1 mg/dL. Defisit energi KP lebih rendah tidak signifikan (p = 0,62) dibandingkan KK, berturut-turut -282,0 ± 482,6 kkal/hari dan -331,8 ± 578,3 kkal/hari. Persentase asupan energi terhadap anjuran KP (94,2 ± 18,5%) lebih tinggi signifikan (p = 0,02) daripada KK (85,4 ± 22,9%). Asupan karbohidrat (KH) total KP (613,1 ± 134,5 kkal/hari) lebih tinggi signifikan (p = 0,02) dibandingkan KK (545,4 ± 161,1 kkal/hari). Asupan protein, lemak total, dan kolesterol KP dan KK sesuai rekomendasi NCEP-ATP III. Pada kedua kelompok, asupan asam lemak jenuh cenderung tinggi, tetapi asupan asam lemak tak jenuh tunggal dan jamak rendah. Asupan serat subyek KP 17,2 ± 2,8 g/hari dan KK 8,6 (5,2−15,2) g/hari. Dengan suplementasi PH tidak tercapai rekomendasi asupan serat. Persentase asupan KH sederhana terhadap energi total KP 11,5±5,4% lebih tinggi signifikan (p = 0,00) dibandingkan KK 6,0 (1,2524,2)%. Penurunan kadar kolesterol LDL serum KP -2,1 ± 16,2 mg/dL lebih sedikit tidak signifikan (p = 0,15) dibandingkan pada KK -10,9 ± 15,3

mg/dL. Penelitian ini belum dapat membuktikan suplementasi PH 8,4 g/hari dan DRKS 1200 kkal/hari selama 4 minggu lebih baik dalam menurunkan kadar kolesterol LDL serum dibandingkan plasebo pada subyek obes I.
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ABSTRACT
This parallel double blind randomized clinical trial is a preliminary study that aims to investigate the effect of soluble fiber supplementation 8.4 g/day and lowcalorie balanced diet (LCBD) for 4 weeks on serum low-density lipoprotein (LDL) cholesterol level in obese I, aged 30−50 years old. A total of 31 subjects were selected using certain criteria and randomly allocated to one of two groups using block randomization; 15 subjects for treatment (T) group and 16 subjects for control (C) group, respectively. The T group received psyllium husk (PH) 8.4 g/day and LCBD 1200 kcal/day, and the C group received placebo and LCBD 1200 kcal/day. Data include age, body mass index (BMI), intake of energy, macronutrient, and fiber, as well as serum LDL cholesterol level. Serum LDL cholesterol level was examined before and after treatment. Statistical analyses include independent t-test and Mann-Whitney with significance level of 5%. Subjects characteristics of the two groups at baseline was not statistically different. Twenty eight subjects (14 subjects in each group) completed the intervention. Supplementation was well tolerated and there were no serious adverse events. The mean age in T and C group was 35.0 (30.0−45.0) and 34.5 (30.0−48.0) years, respectively, and BMI was 28.0 ± 1.1 and 27.2 ± 1.4 kg/m2, respectively. The pretreatment serum LDL cholesterol level in T and C group was 137.0 ± 37.0 and 134.4 ± 29.1 mg/dL, respectively. Energy deficit in T group was insignificantly lower (p = 0.62) than in C group; -282.0 ± 482.6 and -331.8 ± 578.3 kcal/day, respectively. Percentage of energy intake to recommendation in T group (94.2 ± 18.5%) was significantly higher (p = 0.02) than that in C group (85.4 ± 22.9%). Total carbohydrate (CHO) intake in T group (613.1 ± 134.5 kcal/day) was significantly higher (p = 0.02) than in C group (545.4 ± 161.1 kcal/day). Total protein, fat, and cholesterol intake were similar to the NCEP-ATP III recommendation in both groups. Intake of SAFA was higher than recommended, meanwhile PUFA and MUFA intake were lower than those recommended in both groups. Dietary fiber intake in T and C group was 17.2 ± 2.8 and 8.6 (5.2−15.2) g/day, respectively. During the intervention, PH supplementation did not meet the recommendation. Percentage of simple CHO to total energy in T group 11.5±5.4% was significantly higher (p = 0.00) than in C group 6.0 (1.2524.2)%. PH supplementation decreased serum LDL cholesterol level (-2.1 ± 16.2 mg/dL) lower than placebo (-10.9 ± 15.3 mg/dL), but not significant different (p = 0.15). This study shows that PH supplementation 8.4 g/day in combination with LCBD 1200 kcal/day for 4 weeks in obese I aged 30−50 years old is not proven to decrease the serum LDL cholesterol level.