

Perbedaan Efek Infusa Bubuk Kedelai (*Glycine max*), Jamur Tiram (*Pleurotus ostreatus*), dan Campuran Keduanya terhadap Kadar Kolesterol LDL, Ekspresi Gen Reseptor LDL Hati, dan Berat Omentum Majus Mencit Model Hiperlipidemia

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Abstrak

Angka kejadian dislipidemia di Indonesia semakin meningkat. Dislipidemia dan obesitas abdominal merupakan faktor risiko penyakit kardiovaskular. Diperlukan solusi yang efektif dengan bahan alami seperti kedelai dan jamur tiram. Tujuan penelitian ini melihat efektivitas infusa bubuk kedelai, jamur tiram, dan campuran keduanya terhadap kadar kolesterol LDL, ekspresi gen *LDLR* hati, dan berat omentum majus mencit percobaan. Penelitian eksperimental di Laboratorium Farmakologi RSUP Dr. Hasan Sadikin Bandung tahun 2010 memakai rancangan postes kelompok kontrol. Mencit jantan sebanyak 20 ekor dibagi 5 kelompok perlakuan, yaitu A) pakan standar, B) induksi kolesterol, C) infusa kedelai dengan induksi kolesterol, D) infusa jamur tiram dengan induksi kolesterol, dan E) infusa campuran dengan induksi kolesterol. Pada akhir penelitian mencit dikorbankan lalu dibedah untuk diambil darah jantung, juga sedikit bagian hati dan omentum majus. Kolesterol LDL darah kelompok E ($12\pm 5,48$ mg/dL) sama dengan kelompok D ($12\pm 6,06$ mg/dL), tetapi lebih rendah daripada kelompok C ($15\pm 5,35$ mg/dL) dan kelompok B ($13,5\pm 5,45$ mg/dL), namun tidak signifikan. Didapatkan ekspresi gen *LDLR* yang sedang pada kelompok A dan C, ekspresi gen *LDLR* yang lemah pada kelompok B, dan tidak terekspresi pada kelompok D dan E. Berat basah omentum majus kelompok E ($0,40\pm 0,07$ g) lebih rendah bermakna dibanding kelompok A ($0,55\pm 0,07$ g), B ($0,8\pm 0,49$ g), C ($1,28\pm 0,28$ g), D ($0,74\pm 0,11$ g) ($p<0,05$). Berat kering omentum majus kelompok E ($0,16\pm 0,03$ g) lebih rendah bermakna daripada kelompok B ($0,27\pm 0,25$ g), C ($0,39\pm 0,06$ g), dan D ($0,31\pm 0,07$ g) ($p=0,025$). Simpulan, infusa kedelai 100 mg/hari meningkatkan kadar kolesterol LDL darah dan berat omentum majus, tetapi jamur tiram 75 mg/hari sebaliknya, menurunkan kadar kolesterol LDL darah dan berat omentum majus mencit.

Kata kunci: Ekspresi gen, jamur tiram, kedelai, LDL, omentum majus

Differences in Giving Effect of Soybean Powder Infusion (*Glycine max*), Oyster Mushroom (*Pleurotus ostreatus*), and Mixed of Both on LDL-C Levels, LDL-R Gene Expression, and Greater Omentum Weight of Hyperlipidemia Model Mice

Abstract

The incidence of hypercholesterolemia in Indonesia are increase. Hyperlipidemia and abdominal obesity is a risk factor for cardiovascular disease. Needed an effective solution with natural substance like soy and oyster mushrooms. The purpose of this study was to see the effectiveness of the soybean powder infusion, oyster mushrooms, and a mixture of both on LDL cholesterol levels, liver *LDLR* gene expression, and the weight of the experimental mice greater omentum. This experimental study conducted in the Laboratory of Pharmacology Dr. Hasan Sadikin Hospital Bandung in 2010, using a posttest only. Twenty male mice were divided in five treatment groups, namely A) standard diet, B) induction of cholesterol, C) soybean infuse with cholesterol induction, D) oyster mushrooms infuse with induction of cholesterol, and E) mixed infuse with cholesterol induction. At the end of the study mice were dissected for blood drawn from the heart, taken little part of his liver, and the greater omentum were taken. The results of blood LDL cholesterol measurement group E (12 ± 5.48 mg/dL) similar to group D (12 ± 6.06 mg/dL) but lower than group C (15 ± 5.35 mg/dL) and group B (13.5 ± 5.45 mg/dL) but they were not significant. Medium *LDLR* gene expression was found in group A and group C, a weak *LDLR* gene expression in group B, and no expression *LDLR* gene in group D and group E. Measurement results of greater omentum wet weight group E (0.40 ± 0.07 g) was lower than in group A (0.55 ± 0.07 g), B (0.8 ± 0.49 g), C ($1,28\pm 0.28$ g), D (0.74 ± 0.11 g), with significance level significant ($p<0.05$). Measurement results of greater omentum dry weight group E (0.16 ± 0.03 g) was lower than in group B (0.27 ± 0.25 g), C (0.39 ± 0.06 g), D (0.31 ± 0.07 g), and they were significant ($p=0.025$). In conclusion, soy infuse at 100 mg/day increase blood LDL cholesterol levels and increase the weight of greater omentum, whereas the opposite oyster mushrooms at 75mg/day lower blood LDL cholesterol levels and reduce the weight of greater omentum.

Key words: Gene expression, greater omentum, LDL, oyster mushroom, soy