

Abstrak

PENGARUH PEMBERIAN KOPI MIX GULA KELAPA YANG DIPERKAYA MINYAK SAWIT MERAH TERHADAP KADAR MALONDIALDEHID PADA PEROKOK AKTIF

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Latar Belakang: Perokok aktif cenderung memiliki stres oksidatif yang lebih tinggi dibandingkan dengan bukan perokok. Kopi mix gula kelapa MSM mengandung kadar antioksidan tinggi yang dapat menurunkan kadar MDA serum sebagai penanda tingkat stres oksidatif dalam tubuh. Penelitian ini bertujuan untuk mengetahui pengaruh kopi mix gula kelapa diperkaya minyak sawit merah (MSM) terhadap kadar malondialdehid (MDA) serum pada perokok aktif.

Metodologi: Penelitian ini menggunakan rancangan *pretest-posttest with control group design*. Responden merupakan laki-laki perokok aktif berusia 15-49 tahun yang memiliki IMT normal ($18,5 - 25 \text{ kg/m}^2$) dan kebiasaan mengkonsumsi kopi maksimal 3 gelas setiap hari. Responden dibagi dibagi menjadi dua kelompok perlakuan, kelompok pertama diberikan kopi mix gula kelapa diperkaya MSM 25 gr/hari dan kelompok kedua diberikan 2x25 gr/hari, sedangkan kelompok kontrol diberikan kopi mix gula tebu 25 gr/hari selama 1 bulan. Pengambilan darah untuk pengukuran kadar MDA serum dilakukan sebelum dan sesudah intervensi. Kadar MDA serum diukur dengan metode ELISA. Data dianalisis menggunakan uji *Paired sample t-test*, *Oneway Anova*, dan *Shapiro wilk*.

Hasil Penelitian: Seluruh data berdistribusi normal ($p>0,05$) dan karakteristik responden pada penelitian ini telah homogen berdasarkan umur, indeks massa tubuh (IMT), derajat perokok, dan kebiasaan konsumsi kopi ($p>0,05$). Pemberian kopi mix gula kelapa diperkaya MSM kelompok 2x25 gr/hari selama 1 bulan dapat menurunkan kadar MDA 11,3% secara bermakna ($p<0,05$) dibanding kelompok 25 gr/hari (8,6%) sedangkan kelompok kontrol (8,8%).

Kesimpulan: Pemberian kopi mix gula kelapa diperkaya MSM 2x25 gr/hari selama 1 bulan dapat menurunkan kadar MDA serum secara nyata. Asupan antioksidan tinggi menekan stres oksidatif akibat merokok yang mampu mencegah penyakit degeneratif akibat radikal bebas.

Kata kunci: malondialdehid, stres oksidatif , kopi mix gula kelapa minyak sawit merah, perokok aktif

Abstract

EFFECT OF COCONUT SUGAR COFFEE WITH RED PALM OIL ON MALONDYLALDEHIDE SERUM LEVELS IN ACTIVE SMOKERS

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Background: Active smokers tend to have higher oxidative stress compared to non-smokers. Coconut sugar coffee with red palm oil (RPO) contains high levels of antioxidants which can reduce serum MDA levels as a marker of oxidative stress levels in the body. This study aims to determine the effect of coconut sugar coffee with RPO on serum malondialdehyde (MDA) levels in active smokers.

Methods: This study uses a pretest-posttest with control group design. Respondents are male active smokers aged 15-49 years who had a normal BMI ($18.5 - 25 \text{ kg/m}^2$) and the habit of consuming a maximum of 3 cups of coffee every day. Respondents were divided into two experimental groups, the first group consumed 25 gr/day of coconut sugar coffee with RPO and the second group consumed 2x25 gr/day, while the control group consumed cane sugar coffee 25 gr/day for 1 month. Blood sampling was done to measure serum MDA levels before and after intervention. Serum MDA levels were measured by ELISA method. The data was analyzed by Paired sample t-test, One-way Anova, and Shapiro Wilk.

Results: All data were normally distributed ($p > 0.05$) and the characteristics of respondents in this study were homogeneous based on age, body mass index (BMI), degree of smoker, and coffee consumption habits ($p > 0.05$). The provision of coconut sugar coffee mix enriched with MSM group 2x25 gr/day for 1 month can significantly reduce MDA levels ($p < 0.05$) compared to the group 25 gr/day (8.6%) while the control group (8, 8%).

Conclusion: The consumption of coconut sugar coffee with RPO 2x25 gr/day during 1 month decreased serum MDA levels. High antioxidant intake suppresses oxidative stress due to smoking which can prevent degenerative diseases due to free radicals.

Keywords: malondialdehyde, oxidative stress, coconut sugar coffee with RPO, active smokers