

PENGARUH MAKANAN RINGAN KAYA ANTIOKSIDAN TERHADAP PEROKSIDASI LIPID PADA INDIVIDU OBESE

Yunina Ratnasari¹, Sunarti², Emy Huriyati³

ABSTRAK

Latar Belakang: Di Indonesia, proporsi berat badan lebih dan obesitas pada dewasa >18 tahun, dari tahun 2007-2018, data menunjukkan terus mengalami peningkatan. Obesitas dapat menyebabkan berbagai gangguan kesehatan salah satunya memicu timbulnya stres oksidatif. Produk akhir peroksidasi lipid berupa MDA dapat digunakan sebagai penanda terjadinya stres oksidatif. Peningkatan radikal bebas yang disertai dengan menurunnya mekanisme pertahanan antioksidan akan menstimulasi peroksidasi lipid. Produk Keripik Kasabi diketahui mengandung antioksidan yakni berupa beta karoten. Beta karoten diketahui dapat membantu mencegah terjadinya peroksidasi lipid.

Tujuan: Mengetahui pengaruh pemberian makanan ringan kaya antioksidan, Keripik Kasabi, terhadap kadar MDA pada individu obese.

Metode: Desain penelitian adalah *kuasi eksperimental* rancangan *pre dan post test with control design*. Subyek yang terlibat sebanyak 20 orang, dengan BMI>25 kg/m² dan memenuhi kriteria inklusi. Subyek diminta mengkonsumsi makanan ringan keripik sebanyak 42 gram setiap hari selama 6 minggu. Kadar MDA sebelum dan sesudah perlakuan dianalisis menggunakan metode TBARS.

Hasil: Hasil menunjukkan kadar MDA pada kelompok perlakuan mengalami penurunan signifikan pada sebelum dan sesudah perlakuan (rata-rata±SD sebelum perlakuan= 1753 ± 0.417, sesudah perlakuan= 1.188 ± 0.634, *p*= 0.007). Sedangkan pada kelompok perbandingan kadar MDA mengalami penurunan namun tidak berbeda signifikan (sebelum perlakuan = 1.549 ± 0.619, sesudah perlakuan = 1.458 ± 0.986, nilai *p* = 0.595). Selama masa perlakuan, kelompok perlakuan dapat menghabiskan produk dengan rata-rata konsumsi 95% (beta karoten=1310.47 ± 65.4 µg) dan kelompok perbandingan dengan rata-rata 93% (beta karoten= 829.87 ± 46.417 µg).

Kesimpulan: Berdasarkan penelitian ini, didapatkan hasil bahwa pemberian makanan ringan Keripik Kasabi sebanyak 42 gram per hari selama 6 minggu dapat membantu menurunkan kadar MDA individu obese. Namun, faktor lain seperti aktivitas fisik dan asupan makan yang dapat mempengaruhi kadar MDA pada penelitian ini tidak dikontrol. Perlu penelitian lanjutan untuk menjelaskan pengaruh variabel-variabel lain tersebut terhadap perubahan kadar MDA.

Kata Kunci : Obesitas, peroksidasi lipid, MDA, beta karoten.

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1. Mahasiswa Program Studi Gizi Kesehatan FK-KMK UGM
 2. Dosen Pengajar Bagian Biokimia FK-KMK UGM
 3. Dosen Pengajar Program Studi Gizi Kesehatan FK-KMK UGM



THE EFFECT OF SNACK RICH IN ANTIOXIDANT ON LIPID PEROXIDATION OF OBESE INDIVIDUALS

Yunina Ratnasari¹, Sunarti², Emy Huriyati³

ABSTRACT

Background: In Indonesia, the proportion of overweight and obesity in adults ages >18, from 2007-2018, data shows that it continues to increase. Obesity can cause various health problems, one of which triggers oxidative stress. The final product of lipid peroxidation in the form of malondialdehyde (MDA) can be used as a marker of oxidative stress. Increased free radicals accompanied by a decrease in antioxidant defense mechanism will stimulate lipid peroxidation. Kasabi chips contain beta-carotene. Beta-carotene are known as antioxidant vitamins that can help prevent lipid peroxidation.

Objective: The aim of this study was to determine the effect of snack rich in antioxidant, Kasabi chips, consumption on MDA levels in obese individuals.

Methods: This study was quasi-experimental pre and post test with control design. Total of 20 respondents with BMI >25 kg/m² that met the inclusion criteria, participated in this study. Respondents were asked to consume a package (42 gram) of the snack products everyday for 6 weeks. MDA levels pre and post treatment were analyzed using TBARS method.

Results: The results showed that MDA levels in treatment group was significantly reduced after daily consumption of the snack rich in antioxidant over 6 weeks intervention (mean \pm SD pre treatment = 1753 ± 0.417 , post treatment = 1.188 ± 0.634 , $p = 0.007$). Whereas, in control group MDA levels was reduced but not significantly different (pre treatment = 1.549 ± 0.619 , post treatment = 1.458 ± 0.986 , $p = 0.595$). During the intervention, treatment group was able to consume the product 95% (beta carotene = $1310.47 \pm 65.4 \mu\text{g}$) and control group 93% (beta carotene = $829.87 \pm 46,417 \mu\text{g}$).

Conclusion: Daily consumption of 42 grams of Kasabi chips for 6 weeks as snack can help reduce MDA levels in obese individuals. However, other factors such as physical activity and food intake that can affect MDA levels in this study are not confirmed yet. Further research is needed to explain the effect of those other variables on the MDA levels.

Keywords: Obesity, lipid peroxidation, malondialdehyde, beta-carotene

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1. Student of Health Nutrition, Faculty of Medicine, Public Health and Nursing, Gadjah Mada University
 2. Department of Biochemistry Faculty of Medicine, Public Health and Nursing, Gadjah Mada University
 3. Lecturer of Department Health Nutrition, Faculty of Medicine, Public Health and Nursing, Gadjah Mada University