

ABSTRACT

Background: Obesity is a pathological condition caused by excessive body fat accumulation influenced by genetic factors, dietary patterns, and physical activity. The MC4R (Melanocortin 4 receptor) gene variation rs17782313 is one of the risk factors for obesity. This study aims to analyze the relationship between the MC4R rs17782313 genetic variation and the incidence of obesity based on dietary patterns.

Methods: This research employed an unmatched case-control design with 92 samples, consisting of 46 obese individuals and 46 non-obese individuals. The MC4R rs17782313 genotype was analyzed using the tetra ARMS-PCR method. Dietary data were collected through food recall and analyzed using NutriSurvey.

Results: The obese sample group was predominantly female and older compared to the non-obese group. Dietary patterns were more prevalent in the obese group. Individuals whose dietary intake exceeded recommendations had higher consumption levels than those who were below or met the recommendations. The MC4R genetic variation showed a significant result for the TC genotype ($P=0.048$).

Conclusion: The MC4R rs17782313 genetic variation significantly influences the incidence of obesity in the TC genotype. The TC genotype is statistically significant in the relationship between dietary patterns, MC4R genetic variation, and obesity.

Keywords: Obesity, MC4R, Genetic Variation, Jambi City, Muaro Jambi Regency.

ABSTRAK

Latar Belakang: Obesitas adalah kondisi patologis akibat penumpukan lemak tubuh berlebihan yang dipengaruhi faktor genetik, pola makan, dan aktivitas fisik. Variasi gen MC4R (*Melanocortin 4 receptor*) rs17782313 merupakan salah satu faktor risiko obesitas. Penelitian ini bertujuan menganalisis hubungan variasi genetik MC4R rs17782313 dengan kejadian obesitas berdasarkan pola makan.

Metode: Penelitian ini menggunakan desain *unmatched case control* dengan 92 sampel, terdiri atas 46 individu obesitas dan 46 *non* obesitas. Genotipe MC4R rs17782313 dianalisis menggunakan metode tetra ARMS-PCR. Data pola makan dikumpulkan melalui *food recall* dan dianalisis menggunakan *nutrisurvey*.

Hasil: Sampel obesitas didominasi perempuan dan berusia lebih tua dibandingkan *non* obesitas. Pola makan paling banyak ditemukan pada kelompok obesitas. Kelompok dengan pola makan di atas rekomendasi memiliki konsumsi yang lebih tinggi daripada mereka yang di bawah atau sesuai rekomendasi. Variasi genetik MC4R menunjukkan genotipe TC memiliki hasil yang signifikan ($P=0,048$).

Kesimpulan: Variasi genetik MC4R rs17782313 memiliki hasil signifikan terhadap kejadian obesitas di genotipe TC dan genotipe TC signifikan secara statistik antara pola makan dengan variasi genetik MC4R dan obesitas.

Kata Kunci: Obesitas, MC4R, Variasi Genetik, Kota Jambi, Kabupaten Muaro Jambi.