Tesis

KORELASI KADAR VITAMIN D DENGAN *HOMEOSTATIC MODEL ASSESSMENT OF INSULIN RESISTANCE* DAN *HOMEOSTATIC MODEL ASSESSMENT OF β-CELL FUNCTION* PADA PENYANDANG OBES DEWASA NONDIABETES

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ABSTRAK

Latar Belakang: Defisiensi vitamin D menjadi pandemik di seluruh dunia terutama pada penyandang obes. Vitamin D berperan dalam sensitivitas insulin pada jaringan target dan fungsi sel β pankreas. Resisten insulin dan disfungsi sel β pankreas pada obesitas ditenggarai terkait defisiensi vitamin D. Penelitian ini bertujuan untuk membuktikan korelasi vitamin D dengan HOMA-IR dan HOMA-B pada penyandang obes dewasa nondiabetes.

Metode: Penelitian analitik potong lintang dilakukan terhadap 81 penyandang obes dewasa nondiabetes di RSUP Dr. M. Djamil Padang mulai Juni 2020 hingga Juli 2021. Pemeriksaan kadar vitamin D dan insulin puasa menggunakan metode CMIA. Pemeriksaan kadar glukosa puasa menggunakan metode heksokinase. Nilai HOMA-IR dan HOMA-B dihitung menggunakan rumus matematika terhadap kadar glukosa dan insulin puasa. Data dianalisis dengan uji korelasi Spearman, bermakna jika p <0,05.

Hasil: Rentang umur subjek penelitian adalah 18-58 tahun, subjek penelitian sebanyak 47 orang (58%) adalah perempuan, dan rerata IMT 31,46 (3,99) kg/m^2. Rerata kadar vitamin D 14,84 (5,87) ng/mL, median HOMA-IR 2,30 (0,60-12,00), dan median HOMA-B 193,09 (60,83-981,00)%. Analisis korelasi menunjukkan vitamin D tidak berkorelasi dengan HOMA-IR (r= 0,071; p=0,530) dan HOMA-B (r= -0,106; p= 0,347).

Simpulan: Kadar vitamin D tidak berkorelasi dengan HOMA-IR dan HOMA-B pada penyandang obes dewasa nondiabetes.

Kata Kunci: defisiensi vitamin D, disfungsi sel β pankreas,HOMA-B, HOMA-IR, nondiabetes, penyandang obes dewasa, resistensi insulin.

CORRELATION OF VITAMIN D LEVEL WITH HOMEOSTATIC ASSESSMENT MODEL OF INSULIN RESISTANCE AND HOMEOSTATIC ASSESSMENT MODEL OF β-CELL FUNCTION IN NON-DIABETIC OBESE ADULTS

ABSTRACT

Background*: Vitamin D deficiency has become a worldwide pandemic, particularly in obese subjects. Vitamin D plays a role in insulin sensitivity in target tissues and pancreatic β-cell function. Insulin resistance and pancreatic β-cell dysfunction in obesity are suspected to be related to vitamin D deficiency. This study aims to determine the correlation of vitamin D with HOMA-IR and HOMA-B in non-diabetic obese adults.*

Methods*: A cross-sectional analytic study was conducted on 81 non-diabetic, obese adults at RSUP Dr. M. Djamil Padang from June 2020 to July 2021. Measuring vitamin D and fasting insulin levels used the CMIA method and glucose levels used the hexokinase method. Calculating HOMA-IR and HOMA-B values used a mathematical formula for fasting glucose and insulin levels. Analysis of the data used a Spearman correlation test, p <0.05 is significant.*

Results*: The age range of the research subjects were 18-58 years. Of which 47 people (58%) were women, and the mean BMI was 31.46 (3.99) kg/m2. The mean vitamin D level was 14.84 (5.87) ng/mL, the median HOMA-IR was 2.30 (0.60-12.00), and the median HOMA-B was 193.09 (60.83-981.00) %. Correlation analysis showed that vitamin D did not correlate with HOMA-IR (r= 0.071; p=0.530) and HOMA-B (r= -0.106; p= 0.347).*

Conclusion*: Vitamin D levels do not correlate with HOMA-IR and HOMA-B in non-diabetic obese adults.*

Keywords*: HOMA-B, HOMA-IR, insulin resistance, non-diabetic, pancreatic β-cell dysfunction, obese adults, vitamin D deficiency.*