

NILAI DIAGNOSTIK INDEKS TG/ GDP, RASIO TG/HDL DAN HOMA-AD TERHADAP HOMA-IR

Studi pada subjek obesitas sentral

ABSTRAK

LATAR BELAKANG: Obesitas sentral mempengaruhi metabolisme lipid, dan berhubungan dengan peningkatan risiko terjadinya resistensi insulin. *Homeostasis model assessment of insulin resistance* adalah parameter untuk menilai status resistensi insulin, namun harganya mahal dan tidak rutin diperiksa. Indeks trigliserida/ glukosa darah puasa (TG/GDP), rasio trigliserida/ *high density lipoprotein* (TG/HDL) dan *homeostasis model assessment adiponectin* (HOMA-AD) dapat menjadi parameter alternatif untuk penilaian status resistensi insulin pada subjek obesitas sentral.

TUJUAN: Menentukan nilai diagnostik indeks TG/GDP, rasio TG/HDL dan HOMA-AD terhadap HOMA-IR pada subjek obesitas sentral.

METODE : Penelitian analitik observasional dilakukan pada 88 subjek obesitas sentral di Rumah Sakit Nasional Diponegoro. Penentuan nilai *cutoff* indeks TG/GDP, rasio TG/HDL dan HOMA-AD menggunakan kurva *receiver operating characteristic* (ROC). Nilai diagnostik ditentukan menggunakan analisis bivariat.

HASIL: Indeks TG/GDP dengan *cutoff* 4,74 menunjukkan nilai *area under the curve* (AUC) 0,73 (95% CI 0,57-0,89; $p=0,008$); sensitivitas 70,67%; spesifisitas 76,92%; *positive predictive value* (PPV) 94,64%; *negative predictive value* (NPV) 31,25%. Rasio TG/HDL dengan *cutoff* 2,7 menunjukkan nilai AUC 0,67 (95% CI 0,52-0,83; $p=0,047$); sensitivitas 66,67%; spesifisitas 69,23%; PPV 92,59%; NPV 26,47%. *Homeostasis model assessment adiponectin* dengan *cutoff* 0,19 menunjukkan nilai AUC 0,8 (95% CI 0,68-0,92; $p=0,001$); sensitivitas 73,33%; spesifisitas 76,92%; PPV 94,83%; NPV 33,33%.

SIMPULAN: Indeks TG/GDP, rasio TG/HDL dan HOMA-AD memiliki nilai diagnostik yang baik dan dapat dipertimbangkan sebagai parameter alternatif untuk menilai status resistensi insulin pada subjek obesitas sentral.

Kata kunci: Indeks TG/GDP, rasio TG/ HDL, HOMA-AD, HOMA-IR, obesitas sentral

DIAGNOSTIC VALUE OF TYG INDEX, TG/HDL RATIO AND HOMA-AD FOR HOMA-IR

A Study of subjects with central obesity

ABSTRACT

BACKGROUND: Central obesity affects lipid metabolism and is associated with an increased risk of insulin resistance. Homeostasis model assessment of insulin resistance (HOMA-IR) is a parameter used to assess insulin resistance, but it is expensive and not widely available. The triglyceride/fasting blood glucose (TyG) index, triglyceride/high density lipoprotein (TG/HDL) ratio, and the homeostasis model assessment of adiponectin (HOMA-AD) can be considered as surrogate markers for determining insulin resistance status in subjects with central obesity.

AIM: To determine diagnostic value of TyG index, TG/HDL ratio and HOMA-AD for HOMA-IR in subjects with central obesity.

METHOD: A cross-sectional study was conducted on 88 subjects with central obesity in Rumah Sakit Nasional Diponegoro. Cutoff values of TyG index, TG/HDL ratio and HOMA-AD were determined by receiver operating characteristic (ROC). Diagnostic values were determined using bivariate analysis.

RESULTS: Cutoff value for TyG Index was 4.74 with area under the curve (AUC) 0.73 (95% CI 0.57-0.89; $p=0.008$); 70.67% sensitivity; 76.92% specificity; 94.64% positive predictive value (PPV); 31.25% negative predictive value (NPV). Cutoff value for TG/HDL ratio was 2.7 with AUC 0.67 (95% CI 0.52-0.83; $p=0.047$); 66.67% sensitivity; 69.23% specificity; 92.59% PPV; 26.47% NPV. Cutoff value for HOMA-AD was 0.19 with AUC 0.8 (95% CI 0.68-0.92; $p=0.001$); 73.33% sensitivity; 76.92% specificity; 94.83% PPV; 33.33% NPV.

CONCLUSION: TyG Index, TG/HDL ratio and HOMA-AD showed good diagnostic value and can be considered an alternative parameters for determining insulin resistance status in subjects with central obesity.

Keywords: TyG Index, TG/HDL ratio, HOMA-AD, HOMA-IR, central obesity