KORELASI SKOR WHO *CARDIOVASCULAR DISEASE RISK CHART* DENGAN KADAR *SOLUBLE* CD163 SERUM DAN INDEKS *LIPID ACCUMULATION PRODUCT* PADA OBESITAS

ABSTRAK

Latar belakang Obesitas adalah kondisi metabolik kompleks yang dapat menyebabkan inflamasi kronis. Kondisi inflamasi tersebut berperan dalam peningkatan risiko penyakit kardiovaskular (PKV) yang dapat dinilai dengan skor WHO *Cardiovascular Disease Risk Chart*. Inflamasi pada obesitas melibatkan aktivitas makrofag dan penumpukan lemak, yang dapat diukur melalui kadar sCD163 serum dan indeks *Lipid Accumulation Product* (LAP). Korelasi skor WHO CVD *Risk Chart* dengan *biomarker* aktivitas makrofag dan penumpukan lemak pada obesitas belum banyak diteliti.

Tujuan Membuktikan korelasi skor WHO CVD *Risk Chart* dengan kadar sCD163 serum dan indeks LAP pada obesitas.

Metode Penelitian *cross-sectional* ini dilakukan pada bulan Juli – September 2025 di Rumah Sakit Nasional Diponegoro Semarang. Pengambilan sampel darah vena dan pengukuran antropometri dilakukan pada enam puluh satu subyek dengan obesitas. Parameter kimia klinik yang akan digunakan untuk penghitungan skor WHO CVD *Risk Chart* dan indeks LAP diukur dengan *chemistry analyzer*. Pemeriksaan kadar sCD163 serum dilakukan dengan metode *sandwich*-ELISA. Korelasi antar variabel dianalisis dengan uji *Spearman*.

Hasil Hasil uji korelasi antara skor WHO CVD *Risk Chart* dengan kadar sCD163 serum memiliki nilai r = 0,166 (p = 0,20). Hasil uji korelasi antara skor WHO CVD *Risk Chart* dengan indeks LAP memiliki nilai r = 0,404 (p = 0,001).

Simpulan Terdapat korelasi positif sedang antara skor WHO CVD *Risk Chart* dengan indeks LAP, namun tidak terdapat korelasi skor WHO CVD *Risk Chart* dengan kadar sCD163 serum pada obesitas.

Kata Kunci Obesitas, Penyakit Kardiovaskular, WHO *Cardiovascular Risk Chart*, sCD163, Indeks *Lipid Accumulation Product*

CORRELATION OF WHO CARDIOVASCULAR RISK CHART SCORES WITH SERUM SOLUBLE CD163 LEVELS AND LIPID ACCUMULATION PRODUCT INDEX IN OBESITY

ABSTRACT

Background *Obesity is a complex metabolic disease that can lead to chronic inflammation. The inflammatory state plays a role in increasing the risk of cardiovascular disease (CVD), which can be assessed using the WHO Cardiovascular Disease Risk Chart. The inflammation is mediated by macrophage activity and fat accumulation, which can be measured by sCD163 levels and Lipid Accumulation Product (LAP) index. Correlation between WHO CVD Risk Chart scores and biomarker of macrophage activity and fat accumulation in obesity has not been widely studied.*

Objective *To determine the correlation of WHO Cardiovascular Disease Risk Chart scores with serum sCD163 levels and Lipid Accumulation Product index in obesity.*

Methods *This cross-sectional study conducted at Rumah Sakit Nasional Diponegoro Semarang in July – September 2025. Venous blood sampling and anthropometric measurement were performed on sixty-one obese subjects. Clinical chemistry parameters used to calculate the WHO CVD Risk Chart scores and LAP index were measured with a chemistry analyzer. Serum sCD163 levels were measured with sandwich-ELISA method. Correlation between variabels were analyzed using Spearman test.*

Results *The correlation analysis between WHO CVD Risk Chart scores and serum sCD163 levels had r value = 0.166 (p = 0.20). The correlation analysis between WHO CVD Risk Chart scores and LAP index had r value = 0.404 (p = 0.001).*

Conclusions *A moderate positive correlation is observed between WHO CVD Risk Chart scores and LAP index, but there is no correlation between WHO CVD Risk Chart scores and serum sCD163 levels in obesity.*

Keywords *Obesity, Cardiovascular disease, WHO Cardiovascular Disease Risk Chart, sCD163, Lipid Accumulation Product index.*