

## INTISARI

### **HUBUNGAN ANTARA RASIO MONOSIT-*HIGH DENSITY LIPOPROTEIN* DENGAN KEKAKUAN ARTERI PADA PASIEN DIABETES MELITUS**

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**Latar Belakang:** Penelitian terdahulu menunjukkan bahwa inflamasi kronis yang terdapat pada diabetes memiliki peran dalam produksi kolagen abnormal dan degradasi elastin, sehingga dapat memacu kekakuan arteri. Rasio monosit-*High Density Lipoprotein* (RMH) merupakan pengukuran sederhana yang berhubungan dengan inflamasi dan stres oksidatif. Meskipun demikian, hubungan antara RMH dan kekakuan arteri masih belum diketahui.

**Tujuan:** Penelitian ini bertujuan untuk mengetahui hubungan antara RMH dengan kekakuan arteri pada pasien diabetes melitus

**Metode:** Delapan puluh dua pasien diabetes melitus dengan *ankle brachial index*  $\geq 0,9$  dan perkiraan Laju Filtrasi Glomerulus  $\geq 60$  ml/menit/1,73m<sup>2</sup> menjalani penelitian potong lintang. Pemeriksaan *Cardio Ankle Vascular Index* (CAVI) digunakan sebagai parameter kekakuan arteri. Pemeriksaan hitung darah lengkap dan profil lipid dilakukan pada seluruh peserta penelitian. Hubungan antara RMH dan CAVI dianalisis menggunakan analisis korelasi dan regresi linear berganda.

**Hasil:** Pada penelitian ini median RMH adalah 11.87 dengan rerata CAVI  $8.12 \pm 0.92$ . Korelasi Spearman menunjukkan terdapat korelasi positif yang bermakna antara RMH dan CAVI ( $r=0,232$ ,  $p=0,036$ ). Analisis regresi linear berganda menunjukkan bahwa RMH, usia, merokok, DM yang tidak terkontrol dan insulin memiliki hubungan yang independen terhadap CAVI.

**Simpulan:** Terdapat hubungan positif yang bermakna antara rasio monosit-*High Density Lipoprotein* dengan kekakuan arteri yang diukur dengan CAVI pada pasien diabetes melitus.

**Kata Kunci:** Rasio monosit-HDL, *Cardio Ankle Vascular Index*, kekakuan arteri, inflamasi, diabetes

## ABSTRACT

### ASSOCIATION OF MONOCYTE-TO-HIGH DENSITY LIPOPROTEIN RATIO WITH ARTERIAL STIFFNESS IN DIABETIC PATIENTS

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**Background:** Previous studies proposed that chronic inflammation in diabetes has a role in abnormal collagen production and elastin degradation, thus promotes arterial stiffness. Monocyte-to-High Density Lipoprotein (HDL) ratio is a simple measurement associated with inflammation and oxidative stress. However, little is known regarding the relationship of Monocyte-to-HDL ratio with arterial stiffness

**Objective:** The objective of this study was to examine the relationship of Monocyte-to-HDL ratio with arterial stiffness in diabetic patients

**Methods:** A total of 82 diabetic patients with ankle brachial index  $\geq 0.9$  and estimated Glomerular Filtration Rate  $\geq 60$  ml/minute/1,73m<sup>2</sup> were enrolled in a cross sectional study. Cardio Ankle Vascular Index (CAVI) was calculated as an arterial stiffness parameter. Complete blood count and lipid profile were analyzed in all participants. Correlation analysis and further multiple linear regression analysis were done to observe the relationship of Monocyte-to-HDL ratio and CAVI.

**Results:** Median of Monocyte-to-HDL ratio in this study was 11.87 with the mean of CAVI was  $8.12 \pm 0.92$ . Spearman correlation analysis revealed a significant positive correlation between Monocyte-to-HDL ratio and CAVI ( $r=0,232$ ,  $p=0,036$ ). Furthermore, Monocyte-to-HDL ratio, age, smoking and uncontrolled diabetes were found to have independent relationship with CAVI.

**Conclusion:** There is a significant positive correlation of Monocyte-to-High Density Lipoprotein ratio with arterial stiffness measured by CAVI in diabetic patients.

**Keywords:** Monocyte-to-HDL Ratio, Cardio Ankle Vascular Index, arterial stiffness, inflammation, diabetes