

Proatherogenic/antiatherogenic high density lipoprotein type in acute coronary syndrome and healthy male person

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Abstrak

Tujuan: Membuat kriteria tipe HDL proaterogenik/antiaterogenik berdasarkan konsentrasi Apolipoprotein A-I

(ApoA-I), Paraoxonase-1 (PON-1), Neopterin dan HDL-cholesterol.

Metode: Penelitian dilakukan secara kontrol-kasus pada 52 subjek dengan sindrom koroner akut (SKA) dan 30 subjek

kontrol sehat. Tipe HDL proaterogenik dan antiaterogenik ditentukan berdasarkan konsentrasi ApoA-I, PON-1, Neopterin

dan HDL-cholesterol. Konsentrasi ApoA-I diukur menggunakan metode imunoturbidimetri, PON-1 diukur dengan metode

kolorimetri, Neopterin diukur dengan metode ELISA dan HDL-cholesterol diukur dengan metode homogenous. Analisis

regresi logistik univariat dilakukan dengan SKA sebagai variabel tergantung dan konsentrasi ApoA-I, PON-1, Neopterin

dan HDL-cholesterol sebagai variabel tidak tergantung. Tipe HDL proaterogenik dan antiaterogenik ditentukan dengan

menggunakan nilai cut off dan odd ratio ApoA-I, PON-1, Neopterin dan HDL-cholesterol.

Hasil: Umur subjek penelitian adalah $50,89 \pm 12,63$ tahun, konsentrasi HDL-cholesterol : $39,82 \pm 9,84$ mg/dL, Apo

A-1 : $119,77 \pm 32,05$ mg/dL, PON-1 : $41,26 \pm 18,19$ kU/L, Neopterin : $16,22 \pm 38,10$ nmol/L. Cut off ApoA-I, PON-1

dan Neopterin secara berturut-turut adalah $124,5$ mg/dL, $40,8$ kU/L, and $7,016$ nmol/L. Hasil analisis regresi logistik

univariat didapatkan OR untuk ApoA-I, PON-1 dan Neopterin secara berturut-turut $29,759$ (95% CI : $4,074$? $217,382$),

$1,647$ (95% CI : $0,412$? $6,586$), $4,317$ (95% CI : $1,098$? $16,977$). Dengan sistem scoring, kami menyimpulkan total

score > 18 menunjukkan tipe HDL proaterogenik, dan total score < 18 merupakan tipe HDL antiaterogenik. Dengan

sistem scoring ini kami menemukan 78,85% populasi SKA termasuk ke dalam tipe HDL proaterogenik.

Kesimpulan: Disfungsi HDL atau tipe HDL proaterogenik/antiaterogenik dapat diperkirakan dengan menggunakan sistem

scoring ApoA-I ? PON-1 ? Neopterin ? HDL-cholesterol. Subjek dengan total score < 18 dikelompokkan ke dalam tipe HDL

antiaterogenik, sedangkan subjek dengan total score > 18 memiliki tipe HDL proaterogenik.

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Abstract

Aim: To make proatherogenic/antiatherogenic HDL type criteria using Apolipoprotein A-I (ApoA-I), Paraoxonase-1

(PON-1), Neopterin and HDL-cholesterol levels, which may be useful in clinical practice.

Methods: This was a case control study recruiting 52 subjects with Acute Coronary Syndrome (ACS) and 30 control

healthy subjects. HDL type was classified into antiatherogenic and proatherogenic based on the levels of ApoA-I,

PON-1, Neopterin and HDL-cholesterol. Concentrations of ApoA-I was measured by immunoturbidimetry method,

PON-1 was measured by colorimetric method, Neopterin was measured by ELISA, and HDL-C was determined by

homogenous method. Univariate logistic regression analysis was done using ACS as a dependent variable and levels

of ApoA-I, PON-1, Neopterin and HDL-cholesterol as independent variables.

Proatherogenic/antiatherogenic HDL

type was determined by using ApoA-I, PON-1, Neopterin and HDL-cholesterol cut off and odd ratios.

Results: Patient's age was 50.89 ± 12.63 year, HDL-C was 39.82 ± 9.84 mg/dL, Apo A-1 was 119.77 ± 32.05 mg/

dL, PON-1 was 41.26 ± 18.19 kU/L, Neopterin was 16.22 ± 38.10 nmol/L. Cut offs of ApoA-I, PON-1 and Neopterin

successively were 124.5 mg/dL, 40.8 kU/L, and 7.016 nmol/L. On univariate logistic regression analysis showed that

OR of ApoA-I, PON-1 and Neopterin respectively were 29.759 (95% CI : 4.074 - 217.382), 1.647 (95% CI : 0.412 -

6.586), 4.317 (95% CI : 1.098 - 16.977). Using scoring system, we concluded that total score > 18 was proatherogenic

HDL type, and total score < 18 was antiatherogenic HDL type. With this scoring we found 78.85% had proatherogenic

HDL type in ACS population.

Conclusions: Dysfunctional HDL or proatherogenic/antiatherogenic HDL type can be predicted by using ApoA-I -

PON-1 - Neopterin - HDL-cholesterol scoring system. Those with score of 18 are supposed to have antiatherogenic

HDL type, and those with score of > 18 were having proatherogenic HDL type.