

Perbedaan Kadar Histamin Plasma antara Penderita *Acute Coronary Syndrome* dan *Stable Coronary Artery Disease*

Indah Sukmawati Prihatiningsih, J. Nugroho Eko Putranto, Djoko Soemantri

Abstrak

Latar Belakang: Aterosklerosis berperan dalam menimbulkan angina pada pasien Penyakit Jantung Koroner (PJK) baik pada *Acute Coronary Syndrome (ACS)* maupun *Stable Coronary Artery Disease (SCAD)*. Histamin suatu *preformed mediator* sel mast diduga memiliki peran dalam proses aterosklerosis namun hal ini belum sepenuhnya dipahami dan penelitian terkait hal tersebut pada populasi PJK masih belum banyak dilakukan

Tujuan: Membuktikan perbedaan kadar histamin plasma pada penderita *Acute Coronary Syndrome* dan *Stable Coronary Artery Disease*

Metode: Penelitian ini merupakan penelitian analitik observasional dengan desain studi transversal pada 49 penderita PJK yang dikumpulkan secara *purposive sampling*, terdiri dari 25 penderita *ACS* (72% laki-laki, rerata usia 55,6±9,66 tahun) dan 24 penderita *SCAD* (83,3% laki-laki, rerata usia 52,71±8,03 tahun) berdasarkan kriteria diagnosa standar. Sampel darah vena diambil dan disentrifugasi segera untuk mendapatkan plasma darah. Kadar histamin plasma diperiksa dengan menggunakan *Histamine ELISA-Kit*

Hasil: Nilai median kadar histamin plasma pada kelompok *ACS* dan kelompok *SCAD* adalah 30,79 ng/ml (rentang 5,85-36,09 ng/ml) dan 26,42 ng/ml (rentang 0,30-41,39 ng/ml, secara berurutan. Analisis perbedaan nilai median kadar histamin plasma antara kedua kelompok dilakukan dengan *Mann-Whitney U Test*, didapatkan perbedaan bermakna secara statistik ($p=0,011$). Berdasarkan klasifikasi derajat angina didapatkan nilai median histamin plasma pada *CCS I*, *CCS II*, *CCS III* dan *CCS IV* adalah 26,26 ng/ml, 26,44 ng/ml, 30,62 ng/ml, dan 32,08 ng/ml, secara berurutan. Pada subanalisis dengan *Spearman Rank Correlation Test* didapatkan korelasi positif moderat antara kadar histamin plasma dengan derajat angina ($r(49) = +0,379$, $p=0,007$, *two-tailed*)

Kesimpulan: Terdapat perbedaan kadar histamin plasma antara penderita *Acute Coronary Syndrome* dan *Stable Coronary Artery Disease* yang bermakna secara statistik

Kata Kunci: histamin, *acute coronary syndrome*, *stable coronary artery disease*

Differences of Plasma Histamine Level between Acute Coronary Syndrome and Stable Coronary Artery Disease Patients

Indah Sukmawati Prihatiningsih, J. Nugroho Eko Putranto, Djoko Soemantri

Abstract

Background: Atherosclerosis may cause angina in Coronary Artery Disease (CAD) patients either in Acute Coronary Syndrome (ACS) or Stable Coronary Artery Disease. Histamine is a mast cell-preformed mediator which is suspected to play a role in atherosclerosis but the process is not clearly understood and data in CAD population is lacking

Objective: To prove the differences of plasma histamine level in patients with Acute Coronary Syndrome and Stable Coronary Artery Disease

Methods: This was an observational analytic study with transversal study design in 49 CAD patients by purposive sampling, consist of 25 ACS patients (72% men, mean age $55,6 \pm 9,66$ years) and 24 S CAD patients (83,3% men, mean age $52,71 \pm 8,03$ years) as determined by standard diagnostic criteria. Vein whole blood were drawn and centrifuged immediately after collection. The level of plasma histamine were measured using Histamine ELISA-Kit

Results: Median values of plasma histamine level in ACS group and in SCAD group were 30,79 ng/ml (range 5,85-36,09 ng/ml) and 26,42 ng/ml (range 0,30-41,39 ng/ml, respectively. Comparison analysis on the median value of plasma histamine level between two groups were done with Mann-Whitney U Test and showed a statistically significant difference between the two groups ($p=0,011$). Based on the severity of angina, the median values of plasma histamine level in CCS I, CCS II, CCS III and CCS IV were 26,26 ng/ml, 26,44 ng/ml, 30,62 ng/ml and 32,08 ng/ml, respectively. Sub analysis using Spearman Rank Correlation Test showed moderate-positive correlation between plasma histamine level with the severity of angina ($r(49) = +0,379$, $p=0,007$, two-tailed)

Conclusion: There are significant differences of plasma histamine level between Acute Coronary Syndrome and Stable Coronary Artery Disease Patients

Keywords: histamine, acute coronary syndrome, stable coronary artery disease