

## HUBUNGAN KADAR ENDOTHELIN-2 SERUM DENGAN KELAS KILLIP PADA PENDERITA INFARK MIOKARD AKUT DENGAN ST ELEVASI (STEMI)

Risang Wisnumurti<sup>1</sup>, Anggoro B. Hartopo<sup>2</sup>, Vita Y. Anggraeni<sup>2</sup>, Vina Y. Susanti<sup>2</sup>

<sup>1</sup> Program studi Kedokteran, Fakultas Kedokteran, Kesehatan Masyarakat, dan Keperawatan, Universitas Gadjah Mada

<sup>2</sup> Fakultas Kedokteran, Kesehatan Masyarakat, dan Keperawatan, Universitas Gadjah Mada

### INTISARI

**Latar belakang:** Di Indonesia penyakit jantung koroner merupakan salah satu penyebab kematian terbanyak. Sindroma koroner akut merupakan kondisi tidak stabil akibat koyaknya dinding plak aterosklerosis. Pasien infark miokard akut dengan ST elevasi (STEMI) lebih banyak yang menunjukkan prognosis lebih buruk dibanding pasien infark miokard akut tanpa ST elevasi (NSTEMI). Gagal jantung merupakan komplikasi dari infark miokard akut yang dapat diukur keparahannya dengan Kelas Killip. Terdapat hubungan antara endothelin-1 dengan gagal jantung pada penelitian sebelumnya, sedangkan peran endothelin-2 belum dibuktikan pada manusia.

**Tujuan:** Penelitian ini bertujuan untuk mengetahui hubungan kadar endothelin-2 dengan status gagal jantung berdasarkan Kelas Killip

**Metode:** Penelitian ini adalah penelitian observasional. Desain penelitian merupakan penelitian *cross-sectional*. Penelitian ini merupakan analisis dari penelitian payung sebelumnya. Diperoleh 61 subjek pasien STEMI dari Instalasi Gawat Darurat dan Instalasi Rawat Jantung Intensif RSUP Dr. Sardjito yang memenuhi kriteria penelitian. Kadar serum endothelin-2 diukur dengan ELISA *sandwich*. Analisis uji *Mann-Whitney* dilakukan untuk mengetahui perbedaan kadar endothelin-2 antara dua kelompok penelitian.

**Hasil:** Nilai median kadar endothelin-2 pada keseluruhan subjek penelitian adalah 2,27 pg/ml. Kelompok Kelas Killip I berjumlah 47 orang (77%) sedangkan kelompok Kelas Killip II-IV berjumlah 14 orang (23%). Nilai median pada kelompok Kelas Killip I adalah 2,27 pg/ml sedangkan pada kelompok Kelas Killip II-IV 2,00 pg/ml dengan nilai  $p = 0,681$ .

**Kesimpulan:** Tidak terdapat hubungan kadar endothelin-2 serum yang bermakna secara statistik antara kelompok Kelas Killip I dengan kelompok Kelas Killip II-IV pada pasien STEMI.

**Kata Kunci:** Endothelin-2, Gagal Jantung, Kelas Killip, STEMI.

## CORRELATION BETWEEN SERUM ENDOTHELIN-2 WITH KILLIP CLASS ON PATIENT WITH ACUTE ST ELEVATION MYOCARDIAL INFARCT (STEMI)

Risang Wisnumurti<sup>1</sup>, Anggoro B. Hartopo<sup>2</sup>, Vita Y. Anggraeni<sup>2</sup>, Vina Y. Susanti<sup>2</sup>

<sup>1</sup> Bachelor of Medicine, Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada

<sup>2</sup> Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada

### ABSTRACT

**Background:** In Indonesia, coronary heart disease is one of the leading causes of death. Acute coronary syndrome is an unstable condition due to the tearing of atherosclerotic plaque walls. Patients with ST elevation (STEMI) are worse prognosis than patients with acute myocardial infarction without ST elevation (NSTEMI). Heart failure is a complication of acute myocardial infarction which can be classified by Killip Class. There is a relationship between endothelin-1 and heart failure in previous studies, whereas the role of endothelin-2 has not been proven in humans.

**Objective:** To determine the correlation between serum endothelin-2 levels and heart failure based on Killip Class.

**Methods:** This study was an observational study. The study design was a *cross-sectional*. This study was an analysis from the previous study. There were 61 subjects of STEMI patients from the Emergency Department and Intensive Cardiac Care Unit of Dr. Sardjito who met the study criteria. Serum endothelin-2 levels were measured by sandwich ELISA method. Mann-Whitney test analysis was performed to determine the difference in endothelin-2 levels between the two study groups.

**Results:** The median value of endothelin-2 levels in all study subjects was 2.27 pg/ml. In the group with Killip Class I there were 47 people (77%) while in the group with Killip Class II-IV there were 14 people (23%). The median value in the group with Killip Class I was 2.27 pg/ml while in the group with Killip Class II-IV was 2.00 pg/ml with a p value of 0.681.

**Conclusion:** There was no statistically significant serum endothelin-2 levels between group with Killip Class I and group with Killip Class II-IV in patients with STEMI.

**Keywords:** Endothelin-2, Heart Failure, Killip Class, STEMI.