INTISARI

Hubungan Kadar *Soluble* ST2 Serum dengan Disfungsi Ventrikel Kiri Akut pada Pasien Infark Miokard Akut dengan Elevasi Segmen-ST Anterior

Latar Belakang : s*oluble Suppression of Tumorigenicity 2* (sST2) adalah anggota keluarga reseptor interleukin (IL)-1 yang merupakan marker baru untuk regangan mekanik miokardium. Kadar sST2 pada serum akan meningkat pada kondisi infark miokard dan berhubungan dengan lokasi infark anterior. Gagal jantung akut merupakan salah satu komplikasi yang paling sering ditemukan pada IMA-EST. Perkembangan gagal jantung akut merupakan prediktor klinis yang kuat untuk mortalitas jangka pendek dan jangka Panjang. Maka, penting dilakukan penelitian untuk membuktikan peran kadar sST2 terhadap disfungsi ventrikel kiri akut pada pasien IMA-EST.

Tujuan: Untuk mengetahui apakah kadar sST2 serum berhubungan dengan fungsi ventrikel kiri akut pada pasien IMA-EST anterior.

Metode: Penelitian dilakukan menggunakan desain potong-lintang, dengan data sekunder yang didapatkan dari *registry* tesis Hartopo *et al.* (2016). Sampel serum untuk pengukuran kadar sST2 diambil saat admisi pasien di IGD RSUP Dr. Sardjito, Yogyakarta dan diukur menggunakan ELISA kit (*human ST2 R&D system*). Kadar sST2 dibagi menjadi dua kelompok, yaitu sST2 supramedian dan inframedian. Fungsi ventrikel kiri akut ditentukan berdasarkan kelas Killip saat admisi, yaitu dalam awitan≤ 24 jam. Kelas Killip dibagi menjadi dua kelompok berdasarkan ada atau tidaknya gagal jantung akut, yaitu kelas Killip I dan II-IV. Analisis hubungan kadar sST2 dengan kelas Killip dilakukan dengan uji C*hi-Square*, dengan nilai kemaknaan p<0,05.

Hasil: Penelitian ini melibatkan 69 subjek. Nilai median dan rentang interkuartil kadar sST2 dalam darah adalah 764,79 (701,54-825,15) pg/ml. Didapatkan 14 subjek (20%) dengan kelas Killip II-IV dan 55 subjek (80%) dengan kelas Killip I. Hasil analisis statistik menunjukkan hubungan tidak signifikan antara kadar sST2 dengan kelas Killip (p =0,952). Proporsi kelas Killip II-IV sama pada kadar sST2 supramedian maupun inframedian, dengan rasio prevalensi 0,964 (CI95%=0,298-3,118).

Kesimpulan: Kadar sST2 serum tidak berhubungan dengan disfungsi ventrikel kiri akut pada pasien IMA-EST anterior di RSUP Dr. Sardjito.

Kata kunci: sST2, kelas Killip, disfungsi ventrikel kiri akut, IMA-EST anterior

ABSTRACT

Association of Serum Soluble ST2 with Acute Left Ventricular Dysfunction in Patients with Anterior ST-segment Elevation Myocardial Infarction

Background: s*oluble Suppression of Tumorigenicity 2* (sST2) is a member of interleukin-1 receptor family. It has been known as a new biomarker for myocardial strain. Increased concentration of sST2 in circulation is associated with ST-segment elevation myocardial infarction (STEMI) and anterior infarct location. Acute heart failure is a common complication found in STEMI, acting as a strong clinical predictor for short-term and long-term mortality. Thereby, an association between sST2 biomarker and acute left ventricular function needs to be confirmed.

Objective: To determine the association of sST2 and acute left ventricular function in patients with anterior STEMI.

Method: A cross-sectional study was done with secondary data obtained from the registry of Hartopo *et al.* (2016) thesis. Serum sample were collected at baseline in time of patient admission at the Emergency Unit Dr. Sardjito Hospital, Yogyakarta. sST2 was measured by ELISA method (human ST2 R&D system). sST2 levels were divided into supramedian and inframedian groups. Acute left ventricular function was determined based on Killip class on admission within 24-hour. Killip class classified individuals without acute heart failure as Killip class I, and with acute heart failure as Killip class II-IV. Association between sST2 and Killip class was analyzed with the Chi-Square test, with p-value <0.05 regarded as significant.

Results: 69 individuals were involved. Median and interquartile range of the sST2 serum concentration was 764.79 (701.54-825.15) pg/ml. 14 (20%) individuals were classified as Killip class II-IV. 55 (80%) individuals were classified as Killip class I. Statistical analysis found no significant relations between sST2 levels and Killip class (p-value =0.952). The proportion of Killip class II-IV in sST2 supramedian group was the same with that in the sST2 inframedian group, with a prevalence ratio of 0.964 (CI95%=0.298-3.118).

Conclusion: Serum concentration of sST2 is not significantly associated with acute left ventricular function of patients with anterior STEMI in Dr. Sardjito Hospital.

Keywords: sST2, Killip class, acute left ventricular function, anterior STEMI