

Faktor-faktor yang berkontribusi terhadap peningkatan left ventricular end diastolic volume pada pasien icu Covid-19 RSUP Sanglah : kajian pada galectin-3 = Contributing factors in increased left ventricular end diastolic volume in Covid-19 icu patients in Sanglah hospital : a study on galectin-3

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Abstrak

Latar Belakang: Coronavirus Disease 2019 (COVID-19) merupakan penyakit saluran pernafasan yang menjadi pandemi dasawarsa terakhir dan dapat menyebabkan disfungsi jantung. Galectin-3 diduga terkait dengan proses inflamasi yang berlanjut pada remodelling dan akhirnya fibrosis organ. Diharapkan penilaian terhadap Galectin-3 akan memperoleh gambaran perburukan jantung pasien COVID-19 sehingga diperoleh data faktor-faktor yang berpengaruh terhadap peningkatan Left Ventricular End Diastolic Volume (LVEDV) yang nantinya menjadi gagal jantung pada pasien COVID-19.

Metode: Rancangan penelitian ini adalah observasional prospektif analitik di ICU COVID-19 RSUP Sanglah. Penelitian dilakukan sejak bulan Juni sampai Oktober 2021. Semua subjek penelitian diperiksa kadar Galectin-3 menggunakan pemeriksaan Enzyme-Linked Immunosorbent Assay (ELISA). Subjek juga dilakukan evaluasi Left Ventricular End Diastolic Volume (LVEDV) dengan ekokardiografi, diidentifikasi menggunakan skor SOFA saat di ICU COVID-19, serta pemeriksaan terhadap kadar Troponin I. Subjek penelitian tetap akan mendapat terapi COVID-19 sesuai dengan protokol standar Kementerian Kesehatan RI. Setelah 72 jam pasca admisi ICU COVID-19, subjek penelitian akan dilakukan pemeriksaan ulangan terhadap kadar Galectin-3 dan LVEDV. Data yang didapatkan dianalisis dengan uji statistik menggunakan STATATM.

Hasil: Didapatkan total 45 subjek penelitian. Dari hasil analisis bivariat terhadap selisih Galectin-3 dengan LVEDV didapatkan tidak signifikan ($r=0,08$), uji korelasi antara Galectin-3 dan LVEDV saat masuk ruang rawat ICU ternyata tidak signifikan ($r=0,191$), dan korelasi antara Galectin-3 dan LVEDV pasca rawat 72 jam juga tidak signifikan ($r=0,197$). Dari hasil multivariat variabel bebas yakni selisih Galectin-3, usia, jenis kelamin, troponin I, skor SOFA dan CHARLSON terhadap variabel LVEDV ternyata tidak ada satu pun variabel yang memiliki hasil yang bermakna secara statistik ($p<0,05$) terhadap LVEDV.

Simpulan: Tidak ada korelasi antara Galectin-3 dengan peningkatan LVEDV dalam penelitian ini

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Background: Coronavirus Disease 2019 (COVID-19) is a respiratory disease that has become the largest pandemic and also could put heart at risk of dysfunction. Galectin-3 is thought to be related to the inflammatory process that continues with remodeling and eventually fibrosis. By using Galectin-3 assesment, we could overview the possible worsening of the heart and evaluate data on influencing factors in increased Left Ventricular End Diastolic Volume (LVEDV) which could later become heart failure.

Methods: This is an observational prospective analytic study in the COVID-19 ICU of Sanglah Hospital. The study was started from June to October 2021. All research subjects will have their blood samples taken for Galectin-3 levels using Enzyme-Linked Immunosorbent Assay (ELISA). Subjects were also evaluated for Left Ventricular End Diastolic Volume (LVEDV) with echocardiography, identified using SOFA scores,

and also examined their Troponin I levels. Subjects were treated with COVID-19 standard protocol from the Health Ministry. After 72 hours post-admission, subjects were re-examined for Galectin-3 levels and LVEDV. The data were analyzed by statistical tests using STATATM.

Results: A total of 45 research subjects were analysed. Bivariate analysis of the difference of Galectin-3 and LVEDV shown to be insignificant ($r=0.08$), no correlation was found between Galectin-3 level and LVEDV while admitted to the ICU ($r=0.191$), and no correlation found between Galectin-3 level and LVEDV after 72 hours of hospitalization ($r=0.197$). Multivariate analysis also showed that none of variables namely difference of Galectin-3 level, age, gender, troponin I, SOFA and CHARLSON had statistically significant results ($p<0.05$) on LVEDV.

Conclusions: No correlation was found between Galectin-3 level and an increase in LVEDV.