Analisis Perbandingan Kadar Fibrinogen, D-Dimer, dan Dosis Heparin Terapeutik Pada Pasien Deep Vein Thrombosis (DVT) Dengan COVID-19 dan Non COVID-19 = Comparative Analysis of Fibrinogen Levels, D-Dimer, and Therapeutic Heparin Dosage in Deep Vein Thrombosis (DVT) Patients With COVID-19 and Non COVID-19

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Abstrak

Pendahuluan: Deep Vein Thrombosis (DVT) memiliki kecenderungan terus meningkat dengan koinsidensi mortalitas jangka pendek dan morbiditas jangka panjang. COVID-19 dapat menyebabkan hypercoagulable state dan menjadi predisposisi terjadinya DVT. Penelitian ini bertujuan untuk menganalisis hubungan kadar fibrinogen, D-Dimer, dan dosis heparin teraupetik berdasarkan kadar APTT dengan adanya COVID-19 pada pasien DVT. Metode: Desain penelitian komparatif dan kohort prospektif digunakan untuk membandingkan kadar fibrinogen, D-Dimer, dan dosis heparin terapeutik antara pasien COVID-19 dan non COVID-19 yang menderita DVT di RSPN Cipto Mangunkusumo pada bulan Maret 2020 – Maret 2022. Penegakan diagnosis DVT dilakukan dengan pemeriksaan ultrasonografi dan/atau computed tomography angiography (CTA) fase vena. Data variabel utama dan lainnya diperoleh dari rekam medis pasien. Uji T independen atau Mann-Whitney digunakan untuk menganalisis perbedaan nilai variabel antara kedua kelompok. Hasil: Dari total 253 sampel, tidak terdapat perbedaan karakterisitik awal antara kelompok DVT COVID-19 (n=44) dan DVT non COVID-19 (n=209), kecuali pada parameter Wells Score. Kelompok DVT COVID-19 memiliki kadar Fibrinogen, D-Dimer, dan aPTT yang lebih tinggi daripada kelompok DVT non COVID-19, baik sebelum terapi maupun sesudah terapi heparanisasi (semua nilai p =0,000). Pada akhir pengamatan, didapatkan dosis heparin terapeutik pada kelompok DVT COVID-19 lebih tinggi dibanding pada kelompok DVT non COVID-19 (30,00 (20,00-40,00)x103 U vs. 25,00 (20,00-35,00)x103 U, p=0,000). Kesimpulan: Kadar fibriongen, D-Dimer, dan dosis heparin terapeutik pada pasien DVT yang menderita COVID-19 lebih tinggi dibandingkan pada pasien DVT yang tidak menderita COVID-19. Inisiasi pemberian dosis heparin terapeutik dosis tinggi dapat dipertimbangkan pada pasien DVT dengan komorbid COVID-19 dan dipandu oleh hasil pemeriksaan biomarker koagulasi darah.

.....Introduction: Deep Vein Thrombosis (DVT) has an increasing trend with a coincidence of short-term mortality and long-term morbidity. COVID-19 can cause a hypercoagulable state and predispose to DVT. This study aims to analyze the relationship between fibrinogen levels, D-Dimer, and therapeutic heparin doses based on APTT levels in the presence of COVID-19 in DVT patients. Methods: A comparative study design and a prospective cohort were used to compare levels of fibrinogen, D-Dimer, and therapeutic heparin doses between COVID-19 and non-COVID-19 patients suffering from DVT at Cipto Mangunkusumo Hospital in March 2020 – March 2022. Diagnosis of DVT was performed by ultrasound examination and/or computed tomography angiography (CTA) venous phase. The primary variable data and others were obtained from the patient's medical record. An Independent T-test or Mann-Whitney was used to analyze the differences in variable values between the two groups. Results: Of 253 samples, there was no difference in initial characteristics between the DVT COVID-19 (n=44) and non-COVID-19 DVT groups (n=209), except for the Wells Score parameter. The COVID-19 DVT group had higher levels of fibrinogen,

D-Dimer, and aPTT than the non-COVID-19 DVT group, both before and after heparinization therapy (all p-values = 0.000). At the end of the follow-up period, the therapeutic dose of heparin in the COVID-19 DVT group was higher than in the non-COVID-19 DVT group (30.00 (20.00-40.00)x103 U vs. 25.00 (20.00-35.00)x103 U, p-value=0.000). Conclusion: The levels of fibrinogen, D-Dimer, and therapeutic doses of heparin in DVT patients who have COVID-19 are higher than in DVT patients who do not have COVID-19. Initiation of a higher therapeutic dose of heparin can be considered in DVT patients with comorbid COVID-19 and guided by the results of blood coagulation biomarkers.