

# Efektivitas dan Kejadian Peningkatan Enzim Transaminase pada Pasien COVID-19 dengan Terapi Tocilizumab di Rumah Sakit Universitas Indonesia = Effectiveness and Incidence of Elevated Transaminase Enzymes in COVID-19 Patients with Tocilizumab Therapy at Universitas Indonesia Hospital

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## Abstrak

Infeksi Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) pada derajat berat dan kritis dapat menyebabkan kejadian sindrom badai sitokin, dimana jika tidak ditangani secara tepat dapat menyebabkan kegagalan multiorgan. Tocilizumab merupakan antagonis reseptor IL-6 yang telah disetujui dan disarankan sebagai pengobatan untuk menurunkan mortalitas yang disebabkan oleh kejadian sindrom badai sitokin. Penelitian ini bertujuan untuk menganalisis efektivitas dan kejadian peningkatan enzim transaminase pada pasien terkonfirmasi COVID-19 di Rumah Sakit Universitas Indonesia dengan terapi tocilizumab. Penelitian ini dilakukan secara observasional retrospektif dengan desain cross-sectional di Rumah Sakit Universitas Indonesia tahun 2020-2021 dengan teknik total sampling. Pada penelitian ini sejumlah 68 pasien memenuhi kriteria inklusi dan eksklusi, sebagian besar pasien yang menerima terapi tocilizumab adalah laki-laki (58.8%), bergolongan darah B dan O (masing-masing 33.8%), memiliki komorbid hipertensi (47.1%), dan menerima terapi remdesivir (69.1%). Sebanyak 47 dari 68 pasien (69.12%) mengalami kejadian peningkatan enzim transaminase setelah pemberian tocilizumab. Pasien yang menerima terapi tocilizumab lebih banyak mengalami perburukan (55.9%) berdasarkan WHO Clinical Progression Scale tetapi lebih banyak yang mengalami perbaikan (66.2%) berdasarkan nilai CRP. Karakteristik pasien yang berpengaruh terhadap keberhasilan terapi tocilizumab adalah komorbid obesitas (OR: 1.745, 95% CI: 1.196-2.546; P = 0.015) berdasarkan WHO Clinical Progression Scale, golongan darah AB (OR: 3.647, 95% CI: 2.433-5.468; P = 0.001) dan O (OR: 5.333, 95% CI: 1.385-10.541; P = 0.014), serta terapi remdesivir (OR: 3.208, 95% CI: 1.091-9.434; P = 0.050) berdasarkan nilai CRP, serta terapi komorbid diabetes mellitus (OR: 0.208, 95% CI: 0.071-0.610; P = 0.005) berdasarkan Length of Stay (LOS).

.....Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) infection in severe and critical state can cause the occurrence of cytokine storm syndrome, if this condition not treated properly it can cause multi-organ failure. Tocilizumab is an IL-6 receptor antagonist that has been approved and suggested as a treatment to reduce mortality caused by the occurrence of cytokine storm syndrome. This study aims to analyze the effectiveness and incidence of elevated transaminase enzymes in COVID-19 patients at Universitas Indonesia Hospital receiving tocilizumab therapy. This research was conducted retrospectively observational with cross-sectional design at Universitas Indonesia Hospital in 2020-2021 using total sampling. In this study a total of 68 patients met the inclusion and exclusion criteria, the majority of patients who received tocilizumab therapy were male (58.8%), blood group B and O (33.8% each), had comorbid hypertension (47.1%), and receiving remdesivir therapy (69.1%). 47 of 68 patients (69.12%) experienced elevated transaminase enzymes after tocilizumab administration. Patients who received tocilizumab therapy experienced more worsening (55.9%) based on the WHO Clinical Progression Scale but more experienced

improvements (66.2%) based on CRP values. Patient characteristics that influence the effectiveness of tocilizumab therapy are comorbidities, obesity (OR: 1.745, 95% CI: 1.196-2.546; P = 0.015) based on WHO Clinical Progression Scale, blood type AB (OR: 3.647, 95% CI: 2.433-5.468; P = 0.001) and O (OR: 5.333, 95% CI: 1.385-10.541; P = 0.014), remdesivir therapy (OR: 3.208, 95% CI: 1.091-9.434; P = 0.050) based on CRP level, and diabetes mellitus (OR: 0.208, 95% CI: 0.071-0.610; P = 0.005) based on Length of Stay (LOS).