

**PERBEDAAN KADAR INTERLEUKIN-6 DAN ENZIM HEPAR  
BERDASARKAN DERAJAT KLINIS PASIEN COVID-19  
DI RSUP DR. M. DJAMIL PADANG**

**TESIS**



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# PERBEDAAN KADAR INTERLEUKIN-6 DAN ENZIM HEPAR BERDASARKAN DERAJAT KLINIS PASIEN COVID-19 DI RSUP DR. M. DJAMIL PADANG

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## Abstrak

**Latar belakang:** Derajat klinis COVID-19 mulai dari tanpa gejala, sampai berat yang dapat mengancam jiwa. Mekanisme patogenesis COVID-19 adalah terjadi pelepasan sitokin salah satunya interleukin-6 (IL-6) dikenal dengan badai sitokin, yang menyebabkan komplikasi pada berbagai organ termasuk hepar. Penelitian ini bertujuan untuk melihat perbedaan kadar IL-6 dan enzim hepar berdasarkan derajat klinis pasien COVID-19.

**Metode:** Penelitian retrospektif dengan desain potong lintang. Subjek penelitian yaitu pasien COVID-19 yang dirawat di RSUP DR. M. Djamil Padang dari 1 Januari 2021 sampai dengan 31 Desember 2021. Analisis perbedaan kadar IL-6, SGOT dan SGPT berdasarkan derajat klinis dengan menggunakan uji Kruskal-Wallis.

**Hasil:** Karakteristik subjek penelitian, sebagian besar adalah kelompok usia kurang dari 50 tahun (42,06%); perempuan (56,15%); derajat klinis sedang (42,06%). Kadar IL-6 lebih tinggi pada derajat klinis kritis dibandingkan berat, sedang, dan ringan (92,20 pg/ml vs 75,30 pg/ml vs 17,10 pg/ml vs 11,90 pg/ml). Kadar SGOT lebih tinggi pada klinis kritis dan berat (39,00 IU/L) daripada sedang dan ringan (24,00 IU/L vs. 21,50 IU/L), dan kadar SGPT lebih tinggi pada klinis kritis daripada berat (31,00 IU/L vs. 28,50 IU/L), tetapi pada klinis ringan lebih tinggi dari sedang (22,50 IU/L vs. 20,50 IU/L). Terdapat perbedaan yang bermakna pada kadar IL-6 berdasarkan derajat klinis COVID-19 ( $p < 0,05$ ). Terdapat perbedaan yang bermakna pada kadar SGOT dan SGPT berdasarkan derajat klinis COVID-19 ( $p < 0,05$ ).

**Kesimpulan:** : Terdapat perbedaan yang bermakna pada kadar IL-6, SGOT, dan SGPT berdasarkan derajat klinis COVID-19. Makin naik derajat klinis COVID-19 maka kadar IL-6, SGOT, dan SGPT cenderung meningkat.

**Kata kunci:** COVID-19, Enzim Hepar, IL-6, derajat klinis, badai sitokin

# DIFFERENCES IN INTERLEUKIN-6 AND LIVER ENZYME LEVELS BASED ON CLINICAL SEVERITY OF COVID-19 PATIENTS AT DR M DJAMIL HOSPITAL PADANG

## Abstract

**Background:** The clinical severity of COVID-19 varies from asymptomatic to severe and life-threatening. The mechanism in COVID-19 pathogenesis is the release of cytokines such as interleukin-6, referred to as "cytokine storms," that cause multiple organ complications, one of which is liver damage. The purpose of this study is to analyze differences in IL-6 and liver enzyme levels based on the clinical severity of COVID-19.

**Method:** A cross-sectional study with a retrospective approach. The subjects are COVID-19 patients treated at DR. M. Djamil Hospital from January 1<sup>st</sup>, 2021, to December 31<sup>st</sup>, 2021. The Kruskal-Wallis test was performed to analyze differences in IL-6, SGOT, and SGPT levels based on clinical severity.

**Result:** Majority of the subject were less than 50 years old group (42.06%); female (56.15%); moderate clinical severity (42.06%). Critical clinical has higher IL-6 levels than severe, moderate, and mild (92,20 pg/ml vs. 75,30 pg/ml vs. 17,10 pg/ml vs. 11,90 pg/ml). SGOT levels were higher at critical and severe (39,00 IU/L) than moderate and mild (24,00 IU/L vs. 21,50 IU/L), and SGPT levels were higher at critical than severe (31,00 IU/L vs. 28,50 IU/L), but mild levels were higher than moderate (22,50 IU/L vs. 20,50 IU/L). There is a significant difference in IL-6 levels based on the clinical severity of COVID-19 ( $p < 0.05$ ). There is a significant difference in SGOT and SGPT levels based on the clinical severity of COVID-19 ( $p < 0.05$ ).

**Conclusion:** There is a significant difference in IL-6, SGOT and SGPT levels based on the clinical severity of COVID-19. There is a trend of increasing IL-6, SGOT, and SGPT levels towards increasing clinical severity of COVID-19.

**Key words:** COVID-19, IL-6, liver enzyme, clinical severity, cytokine storm

