

**HUBUNGAN KADAR ENZIM TRANSAMINASE PASIEN COVID-19  
DENGAN DERAJAT KEPARAHAN PENYAKIT  
DI RSUP Dr. M. DJAMIL PADANG**



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## ABSTRACT

### **THE CORRELATION BETWEEN TRANSAMINASE ENZYMES AND THE SEVERITY OF CORONAVIRUS DISEASE 2019 IN Dr. M. DJAMIL CENTRAL PUBLIC HOSPITAL**

By

**Rahmadina, Deddy Herman, Efrida, Almurdi, Russilawati, Dwitya Elvira**

*Liver injury is one of the problems caused by coronavirus disease 2019 (COVID-19), characterized by increased levels of transaminase enzymes (aspartate aminotransferase/AST and alanine aminotransferase/ALT). Aimed of this study is to analyse the correlation between transaminase enzyme levels with severity of COVID-19 in Dr. M. Djamil Central Public Hospital, Padang.*

*This was an observational analytic study with a cross-sectional design. Data were obtained randomly from medical records of confirmed COVID-19 patients hospitalized in Dr. M. Djamil Central Public Hospital from June to August 2021, with moderate, severe, and critical severity based on criteria of Indonesian Ministry of Health. Data were analysed by Chi-square test to examine the correlation between two variables and simple logistic regression test to assess the level of risk between two variables.*

*Analysis of 218 sample showed that 53.67% were female, 35.32% aged 45-59 years, 43.58% with comorbid obesity, 43.58% had moderate severity, 57,80% had abnormal AST, and 44,95% had abnormal ALT. The median AST was highest in critical group, while the median ALT was highest in severe group. Distribution of sex and age group were significantly different based on AST and ALT levels, and distribution of patients with coronary heart disease significantly different based on ALT levels. Transaminase enzyme levels had a significant correlation with each degree of severity of COVID-19 (p-value = 0,00). Patients with critical degree were the most at risk for having abnormal AST levels and severe degrees were the most at risk for having abnormal ALT levels.*

*This study concludes that there is a significant correlation between transaminase enzyme levels with severity of COVID-19.*

**Keywords:** COVID-19, Liver Injury, Transaminases, Disease Severity

## ABSTRAK

### HUBUNGAN KADAR ENZIM TRANSAMINASE PASIEN COVID-19 DENGAN DERAJAT KEPARAHAN PENYAKIT DI RSUP Dr. M. DJAMIL PADANG

Oleh

**Rahmadina, Deddy Herman, Efrida, Almurdi, Russilawati, Dwitya Elvira**

Cedera hati menjadi salah satu gangguan akibat infeksi *coronavirus disease 2019* (COVID-19) yang ditandai dengan peningkatan kadar enzim transaminase (*aspartate aminotransferase*/AST dan *alanine aminotransferase*/ALT). Tujuan penelitian ini adalah mengetahui hubungan kadar enzim transaminase pasien COVID-19 dengan keparahan penyakit di RSUP Dr. M. Djamil Padang.

Penelitian ini adalah penelitian analitik observasional dengan desain *cross sectional*. Data diambil secara acak dari rekam medik pasien terkonfirmasi COVID-19 yang dirawat di RSUP Dr. M. Djamil Padang periode Juni – Agustus 2021, dengan derajat keparahan sedang, berat, dan kritis berdasarkan kriteria Kementerian Kesehatan Republik Indonesia. Data dianalisis menggunakan uji *Chi-square* untuk melihat adanya hubungan antar dua variabel dan uji regresi logistik sederhana untuk menilai tingkat risiko antar dua variabel penelitian.

Analisis 218 sampel menghasilkan 53,67% pasien berjenis kelamin perempuan, 35,32% berusia 45 – 59 tahun, 43,58% dengan komorbid obesitas, 43,58% berderajat keparahan sedang, 57,80% pasien dengan kadar AST abnormal, dan 44,95% pasien dengan kadar ALT abnormal. Median AST tertinggi berada pada derajat kritis, sedangkan median ALT tertinggi pada derajat berat. Distribusi jenis kelamin dan kelompok usia berbeda secara bermakna berdasarkan kadar AST dan ALT, serta distribusi pasien dengan penyakit jantung koroner berbeda secara bermakna berdasarkan kadar ALT. Kadar enzim transaminase memiliki hubungan yang bermakna dengan tiap derajat keparahan COVID-19 ( $p = 0,00$ ). Pasien derajat kritis paling berisiko memiliki kadar AST abnormal dan derajat berat paling berisiko memiliki kadar ALT abnormal.

Simpulan penelitian ini adalah ditemukannya hubungan bermakna antara kadar enzim transaminase dengan derajat keparahan COVID-19.

**Kata Kunci** : COVID-19, Cedera Hati, Enzim Transaminase, Keparahan Penyakit