

**PENGARUH PEMBERIAN KADMIUM TERHADAP KADAR SGOT DAN  
SGPT SERUM TIKUS PUTIH JANTAN (*Rattus norvegicus*)**



- Dosen Pembimbing
1. Drs. Endrinaldi, MS
  2. Dr. dr. Yuliarni Syafrita, Sp.S (K)

FAKULTAS KEDOKTERAN  
UNIVERSITAS ANDALAS  
PADANG  
2019

# EFFECTS OF CADMIUM EXPOSURE ON SGOT AND SGPT SERUM IN MALE WISTAR RATS (*Rattus norvegicus*)

By  
AddelinSildferisa

## ABSTRACT

Cadmium is a harmful contaminant substance to the environment and humans. Consumed cadmium can accumulate and damage the liver. The purpose of this study is to determine the effect of cadmium exposure on and SGPT serum levels in male white rats (*Rattus norvegicus*).

This study uses an experimental method with post-test only control group design. There were twenty eight rats divided randomly into 4 groups; the control group (K), the treatment groups 1, 2, and 3 (P1, P2, and P3). The control group was only given standard feed, while treatment groups 1, 2, and 3 were given cadmium at a dose of 2.5 mg/kgBW, 5 mg/kgBW, and 10 mg/kgBW orally through a feeding tube for 4 weeks. The levels of SGOT and SGPT serum were examined by the IFCC method without pyridoxal phosphate. Data were analyzed by one way ANOVA and Least Significant Differences (LSD) post-hoc test.

The results showed that the SGOT and SGPT levels were significantly elevated in the group of rats exposed to cadmium at a dose of 2.5 mg/kgBW, 5 mg/kgBW, and 10 mg/kgBW compared to the control group. The mean levels of SGOT for the control group was 18.28 U/L, 24.67 U/L for the treatment group one, 25.11 U/L for the treatment group two, and 27.92 U/L for the treatment group three. While the mean levels of SGPT for the control group was 28.28 U/L, 31.62 U/L for the treatment group one, 37.61 U/L for the treatment group two, and 41.52 U/L for the treatment group three. This elevation is proportional to the increase of cadmium doses given.

Based on this study it can be concluded that there was significant association between cadmium given at a dose of 2.5 mg/kgBW, 5 mg/kgBW, and 10 mg/kgBW to the increase levels of SGOT and SGPT serum in rats ( $p < 0,05$ ).

Keywords: cadmium, SGOT, SGPT

# PENGARUH PEMBERIAN KADMIUM TERHADAP KADAR SGOT DAN SGPT SERUM TIKUS PUTIH JANTAN (*Rattus norvegicus*)

Oleh  
Addelin Sildferisa

## ABSTRAK

Kadmium merupakan salah satu zat kontaminan berbahaya bagi lingkungan dan manusia. Kadmium yang dikonsumsi dapat terakumulasi dan merusak hepar. Penelitian ini bertujuan untuk mengetahui pengaruh paparan kadmium terhadap kadar SGOT dan SGPT serum tikus putih jantan (*Rattus norvegicus*).

Penelitian ini menggunakan metode eksperimental dengan desain *post-test only control group design*. Terdapat dua puluh delapan ekor tikus sebagai sampel yang dibagi secara acak menjadi 4 kelompok, yaitu kelompok kontrol (K), kelompok perlakuan 1, 2, dan 3 (P1, P2, dan P3). Kelompok kontrol hanya diberikan pakan standar, sedangkan kelompok perlakuan 1, 2, dan 3 diberikan kadmium dengan dosis 2,5 mg/kgBB, 5 mg/kgBB, dan 10 mg/kgBB secara oral melalui *feeding tube* selama 4 minggu. Kadar rerata SGOT dan SGPT serum diperiksa dengan metode IFCC tanpa *pyridoxal phosphate*. Data dianalisis dengan one way ANOVA dan uji *post hoc Least Significant Differences (LSD)*.

Hasil penelitian menunjukkan terjadinya peningkatan rerata kadar SGOT dan SGPT pada kelompok tikus yang diberikan kadmium dosis 2,5 mg/kgBB, 5 mg/kgBB dan 10 mg/kgBB dibandingkan dengan kelompok kontrol. Rerata kadar SGOT pada kelompok kontrol 18,28 U/L, kelompok perlakuan satu 24,67 U/L, kelompok perlakuan dua 25,11 U/L, dan kelompok perlakuan tiga 27,92 U/L. Rerata kadar SGPT pada kelompok kontrol 28,28 U/L, kelompok perlakuan satu 31,62 U/L, kelompok perlakuan dua 37,61 U/L, dan kelompok perlakuan tiga 41,52 U/L. Peningkatan tersebut sebanding dengan meningkatnya dosis kadmium yang diberikan.

Dapat disimpulkan bahwa secara statistik ada pengaruh yang signifikan pemberian kadmium dosis 2,5 mg/kgBB, 5 mg/kgBB, dan 10 mg/kgBB terhadap kadar SGOT dan SGPT serum tikus ( $p < 0,05$ ).

Kata kunci: kadmium, SGOT, SGPT