

PENGARUH DURASI PEMBERIAN DIET TINGGI LEMAK TERHADAP KADAR SGOT DAN SGPT PADA TIKUS PUTIH (*Rattus norvegicus*)

Fakultas Kedokteran Universitas Jenderal Soedirman

Email : auliaamelia25@gmail.com

ABSTRAK

Latar belakang: Pola konsumsi masyarakat mengalami pergeseran menuju konsumsi olahan tinggi lemak. Konsumsi makanan tinggi lemak berkepanjangan dapat berujung pada kondisi penumpukan lemak di hepar. SGOT dan SGPT merupakan pemeriksaan penunjang yang digunakan dalam menilai kerusakan hepar. Penelitian ini bertujuan menganalisis pengaruh durasi pemberian diet tinggi lemak terhadap kadar SGOT dan SGPT pada tikus putih (*Rattus norvegicus*).

Metode: Penelitian observasional analitik menggunakan data sekunder dengan desain *ex post facto*. Tiga puluh dua ekor tikus dibagi dalam dua kelompok perlakuan yaitu kelompok kontrol dan kelompok induksi diet tinggi lemak. Kadar SGOT dan SGPT kelompok induksi diet tinggi lemak diukur secara serial minggu ke 4, 6, dan 8. Pemeriksaan menggunakan metode enzimatik kinetik. Analisis data menggunakan uji Friedman sebab data tidak terdistribusi normal.

Hasil: Rerata SGOT kelompok kontrol $112,07 \pm 19,85$ U/L; minggu ke-4 $155,88 \pm 16,54$ U/L; minggu ke-6 $166,91 \pm 32,51$ U/L; dan minggu ke-8 $178,04 \pm 46,25$ U/L. Rerata kadar SGPT kelompok kontrol $41,21 \pm 6,24$ U/L; minggu ke-4 $53,84 \pm 17,80$ U/L; minggu ke-6 $69,90 \pm 18,13$ U/L; dan minggu ke-8 $72,11 \pm 50,92$ U/L. Hasil analisis bivariat dengan uji Friedman menunjukkan terdapat pengaruh bermakna durasi pemberian diet tinggi lemak terhadap kadar SGOT ($p=0,000$) dan SGPT ($p=0,001$). Peningkatan bermakna kadar SGOT dimulai pada minggu ke-4 ($p=0,000$), sedangkan peningkatan bermakna kadar SGPT dimulai pada minggu ke-6 ($p=0,037$).

Simpulan: Terdapat pengaruh durasi pemberian diet tinggi lemak terhadap kadar SGOT dan SGPT tikus putih (*Rattus norvegicus*) yang ditandai peningkatan gradual rerata kedua enzim tersebut.

Kata kunci: diet tinggi lemak, SGOT, SGPT

THE EFFECT OF THE DURATION OF HIGH-FAT DIET ON SGOT AND SGPT LEVELS IN WHITE RATS (*Rattus norvegicus*)

Fakultas Kedokteran Universitas Jenderal Soedirman

Email : auliaamelia25@gmail.com

ABSTRACT

Background: Dietary patterns had shifted toward increased consumption of high-fat processed foods. Prolonged consumption of high-fat foods could lead to obesity, which resulted in fat accumulation in the liver. SGOT and SGPT were supportive examinations used to assess liver damage. This study aimed to analyze the effect of the duration of a high-fat diet on SGOT and SGPT levels in white rats (*Rattus norvegicus*).

Methods: This was an observational analytic study using secondary data with an ex post facto design. Thirty-two rats were divided into two treatment groups: a control group and a high-fat diet-induced group. SGOT and SGPT levels in the high-fat diet-induced group were measured serially at weeks 4, 6, and 8. The examinations were performed using the enzymatic kinetic method. Data analysis was conducted using the Friedman test because the data were not normally distributed.

Results: The mean SGOT levels of the control group are $112,07 \pm 19,85$ U/L; at week 4 are $155,88 \pm 16,54$ U/L; at week 6 are $166,91 \pm 32,51$ U/L; and at week 8 are $178,04 \pm 46,25$ U/L. The mean SGPT levels of the control group are $41,21 \pm 6,24$ U/L; at week 4 are $53,84 \pm 17,80$ U/L; at week 6 are $69,90 \pm 18,13$ U/L; and at week 8 are $72,11 \pm 50,92$ U/L. Bivariate analysis using the Friedman test shows a significant effect of the duration of high-fat diet on SGOT levels ($p=0,000$) and SGPT levels ($p=0,001$). A significant increase in SGOT levels begins at week 4 ($p=0,000$), whereas a significant increase in SGPT levels begins at week 6 ($p=0,037$).

Conclusions: There is an effect of the duration of high-fat diet administration on SGOT and SGPT levels in white rats (*Rattus norvegicus*), as indicated by an increase in the mean levels of both enzymes

Keywords: high fat diet, SGOT, SGPT