

**PENGARUH DURASI PEMBERIAN DIET TINGGI LEMAK TERHADAP
GLUKOSA DARAH PUASA (GDP) PADA TIKUS PUTIH
(*Rattus norvegicus*)**

ABSTRAK

Latar belakang: Diet tinggi lemak diketahui berperan dalam meningkatkan resistensi insulin dan kadar glukosa darah puasa (GDP). Namun, durasi pemberian diet tinggi lemak yang optimal untuk memicu perubahan GDP secara konsisten pada model hewan masih bervariasi. **Tujuan:** Mengetahui perbedaan pengaruh durasi induksi diet tinggi lemak 4, 6, dan 8 minggu terhadap glukosa darah puasa pada tikus putih (*rattus norvegicus*). **Metode:** Penelitian observasional analitik dengan desain *ex post facto*. Subjek penelitian adalah tikus putih jantan (*Rattus norvegicus*) yang dibagi menjadi kelompok kontrol dengan diet standar dan kelompok perlakuan yang diberikan diet tinggi lemak selama 4, 6, dan 8 minggu. Kadar glukosa darah puasa diukur menggunakan metode enzimatis GOD-PAP. Analisis data menggunakan *Repeated Measures ANOVA*, dilanjutkan dengan uji *post-hoc*. **Hasil:** Rerata GDP kelompok kontrol $66,26 \pm 13,27$ mg/dL; minggu ke-4 $66,82 \pm 14,59$ mg/dL; minggu ke-6 $97,53 \pm 15,62$ mg/dL; dan pada minggu ke-8 $134,82 \pm 8,38$ mg/dL. Uji *Repeated Measures ANOVA* menunjukkan bahwa durasi pemberian diet tinggi lemak berpengaruh signifikan terhadap kadar glukosa darah puasa tikus putih ($p=0,001$) dan peningkatan mulai signifikan setelah pemberian HFD 6 minggu ($p<0,001$). **Kesimpulan:** Terdapat pengaruh signifikan durasi pemberian diet tinggi lemak terhadap kadar glukosa darah puasa pada tikus putih (*Rattus norvegicus*). Peningkatan bermakna kadar glukosa darah puasa mulai terjadi setelah pemberian diet tinggi lemak selama 6 minggu. Semakin lama durasi pemberian diet tinggi lemak, semakin tinggi kadar glukosa darah puasa.

Kata kunci: diet tinggi lemak, durasi induksi, GDP, tikus putih

THE EFFECT OF HIGH-FAT DIET DURATION ON FASTING BLOOD GLUCOSE (FBG) IN WHITE RATS

(*Rattus norvegicus*)

ABSTRACT

Background: A high-fat diet is known to play a role in increasing insulin resistance and fasting blood glucose (FBG) levels. However, the optimal duration of high-fat diet administration to consistently trigger changes in FBG in animal models still varies. **Objective:** Determined the effect of the duration of high-fat diet administration on fasting blood glucose levels in white rats (*Rattus norvegicus*). **Methods:** An analytical observational study with an ex post facto design. The subjects of the study were male white rats (*Rattus norvegicus*) divided into a control group fed a standard diet and a treatment group fed a high-fat diet for 4, 6, and 8 weeks. Fasting blood glucose levels were measured using the GOD-PAP enzymatic method. Data analysis was performed using Repeated Measures ANOVA, followed by post-hoc tests. **Results:** Mean FBG of the control group $66,26 \pm 13,27$ mg/dL; week 4 $66,82 \pm 14,59$ mg/dL; week 6 $97,53 \pm 15,62$ mg/dL; and at week 8 $134,82 \pm 8,38$ mg/dL. Repeated Measures ANOVA shows that the duration of high-fat diet administration had a significant effect on the fasting blood glucose levels of white rats ($p=0,001$) and the increase became significant after 6 weeks of HFD intervention ($p<0,001$). **Conclusion:** There was a significant effect of the duration of high-fat diet administration on fasting blood glucose levels in white rats (*Rattus norvegicus*). A significant increase in fasting blood glucose levels began to occur after 6 weeks of a high-fat diet. The longer the duration of high-fat diet administration, the higher the fasting blood glucose levels.

Keywords: FBG, High-Fat Diet, induction duration, white rats