

INTISARI

PENGARUH INDUKSI STREPTOZOTOCIN TERHADAP KADAR GLUKOSA DAN PROFIL HEMATOLOGI PADA TIKUS (*Rattus norvegicus*) GALUR WISTAR

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Penelitian ini bertujuan mengetahui efek pemberian streptozotocin terhadap kadar glukosa darah, gambaran eritrosit dan leukosit pada tikus penderita hiperglikemia buatan. Dalam penelitian digunakan 10 ekor tikus betina galur Wistar umur dua bulan dengan berat 113-138 gram dan 10 ekor tikus jantan galur *Wistar* umur dua bulan dengan berat badan 125-188 gram. Tikus-tikus diadaptasikan selama satu minggu. Pada hari ke-1 tikus tersebut diinduksi Streptozotocin dosis 40 mg/kg BB/IP. Pengambilan darah dilakukan sebelum tikus diinjeksi Streptozotocin (hari ke-0), setelah diinjeksi Streptozotocin (hari ke-5) dan diakhir penelitian (hari ke-12). Parameter yang diukur adalah kadar glukosa darah, gambaran eritrosit (jumlah eritrosit, kadar hemoglobin, (*Packed Cell Volume*) PCV, (*Mean Corpuscular Volume*) MCV, (*Mean Corpuscular Hemoglobin*) MCH, (*Mean Corpuscular Hemoglobin Concentration*) MCHC)) dan jumlah leukosit pada hari ke-0, ke-5, dan ke-12. Pemeriksaan jumlah eritrosit tikus jantan dan betina sama-sama mengalami penurunan. Kadar hemoglobin tikus jantan dan betina keduanya mengalami penurunan. Kadar PCV tikus jantan dan betina keduanya mengalami penurunan. Kadar MCV tikus jantan dan betina keduanya mengalami kenaikan. Kadar MCH tikus jantan dan betina keduanya mengalami penurunan. Kadar MCHC tikus jantan dan betina keduanya mengalami penurunan. Kemudian, pemeriksaan jumlah leukosit tikus jantan dan betina keduanya mengalami kenaikan. Hasil analisis statistik menunjukkan tidak ada perbedaan signifikan ($P > 0,05$) induksi STZ terhadap gambaran darah (MCV, MCH, MCHC) dan jumlah leukosit antara tikus kelompok jantan dan betina. Tetapi, pada total eritrosit, Hb, dan PCV menunjukkan ada perbedaan yang signifikan ($P < 0,05$) antara tikus kelompok jantan dan betina. Berdasarkan hasil dapat disimpulkan bahwa Induksi Streptozotocin dosis tunggal 40 mg/kg BB/IP mampu menginduksi hiperglikemia namun tidak berpengaruh terhadap gambaran darah (total eritrosit, kadar hemoglobin, PCV, MCV, MCH, MCHC) dan jumlah leukosit.

Kata Kunci : eritrosit, hiperglikemia, leukosit, streptozotocin, tikus wistar (*Rattus norvegicus*).

ABSTRACT

THE EFFECT OF STREPTOZOTOCIN INDUCTION TOWARDS GLUCOSE LEVEL AND HEMATOLOGY PROFILE OF RATS (*Rattus norvegicus*) STRAIN WISTAR

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This study aims to determine the effect of streptozotocin induction towards blood level, erythrocyte and leukocyte features in rats with artificial hyperglycemia. In this study, the writer used 10 two months old female Wistar strain rats weighing 113 – 138 grams and 10 male Wistar strain rats weighing 125 – 188 grams at the same age. The rats were adapted for a week. On the first day, the rats were induced with Streptozotocin with 40 mg/kg BW/IP dose. The blood samples were taken before the rats were injected by Streptozotocin (day-0), after the rats were injected (day-5) and at the end of the research (day-12). Parameters measured were blood glucose levels, erythrocyte features (erythrocytes total, hemoglobin, (*Packed Cell Volume*) PCV, (*Mean Corpuscular Volume*) MCV, (*Mean Corpuscular Hemoglobin*) MCH, (*Mean Corpuscular Hemoglobin Concentration*) MCHC) and leucocytes total. The total research of Erythrocytes, hemoglobin, PCV, MCV, MCH, MCHC, and leucocytes total on the 0 day, 5th day, and the 12th day. The total examination of erythrocytes from both male and female rats equally decreased. The hemoglobin levels of both male and female rats are also decreased. PCV levels of both male and female rats are also decreased. MCV levels of both male and female rats are also increased. MCH levels of both male and female rats are also decreased. MCHC levels of both male and female rats are also decreased. Then, total examination of leucocytes from both male and female rats are also increased. The statistics analysis result showed that there are no significant difference ($P>0.05$) of STZ induction towards blood features (MCV, MCH, MCHC) and leucocytes between both male and female rats. But, statistics analysis result showed that there are significant difference ($P<0.05$) towards blood features erythrocytes total, hemoglobin and PCV between both male and female rats. Based on the results above, the writer conclude that single-dose induction of Streptozotocin 40 mg/kg BW/IP are able to induce hyperglycemia but has no effect on blood features (erythrocytes total, hemoglobin, PCV, MCV, MCH, MCHC) and leucocytes total.

Keywords: erythrocyte, hyperglycemia, leucocyte, streptozotocin, wistar rats (*Rattus norvegicus*).