

## ABSTRAK

### **GAMBARAN LEUKOGRAM TIKUS (*Rattus norvegicus*) GALUR WISTAR 14 HARI PASCA CEDERA KOMPRESI MEDULA SPINALIS**

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Cedera kompresi medula spinalis merupakan kondisi patologis yang menimbulkan respons inflamasi sistemik dan berpotensi menyebabkan perubahan hematologis, termasuk pada jumlah total leukosit. Penelitian ini bertujuan untuk mengevaluasi gambaran leukogram berupa jumlah total leukosit, granulosit, dan limfosit pada tikus (*Rattus norvegicus*) galur Wistar 14 hari pasca induksi cedera kompresi medula spinalis. Penelitian ini menggunakan enam ekor tikus galur Wistar yang dibagi menjadi dua kelompok, yaitu kelompok kontrol dan kelompok perlakuan, masing-masing sebanyak tiga ekor. Tikus pada kelompok perlakuan diinduksi cedera medula spinalis melalui prosedur laminektomi dan penjepitan medula spinalis dengan *hemostatic forceps* selama 10 detik. Setelah 14 hari, darah diambil melalui pleksus retro-orbitalis dan dianalisis menggunakan *hematologic analyzer*. Data dianalisis menggunakan uji normalitas Shapiro-Wilk dan uji *independent sample t-test*. Hasil penelitian menunjukkan peningkatan jumlah total leukosit dan granulosit pada kelompok perlakuan dibandingkan dengan kelompok kontrol, yaitu masing-masing sebesar  $8,83 \times 10^3/\mu\text{L}$  dan  $5,47 \times 10^3/\mu\text{L}$ , dibandingkan dengan  $5,57 \times 10^3/\mu\text{L}$  dan  $2,30 \times 10^3/\mu\text{L}$ . Sementara itu, kadar limfosit mengalami penurunan pada kelompok perlakuan menjadi  $2,76 \times 10^3/\mu\text{L}$  dibandingkan  $3,03 \times 10^3/\mu\text{L}$  pada kelompok kontrol. Perbedaan antar kelompok tidak menunjukkan signifikansi statistik ( $p > 0,05$ ). Hasil ini mengindikasikan bahwa cedera kompresi medula spinalis menimbulkan kecenderungan respons inflamasi sistemik melalui perubahan komponen leukogram, meskipun belum signifikan secara statistik. Disarankan dilakukan pemeriksaan hematologi lanjutan pada titik waktu berbeda untuk memahami dinamika respons imun secara lebih mendalam.

Kata kunci: Cedera kompresi medula spinalis, granulosit, leukosit, limfosit

## ABSTRACT

### LEUKOGRAM PROFILE OF WISTAR RATS (*Rattus norvegicus*) 14 DAYS AFTER SPINAL CORD COMPRESSION INJURY

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Spinal cord compression injury is a pathological condition that induces a systemic inflammatory response and has the potential to cause hematological alterations, including changes in total leukocyte count. This study aimed to evaluate the leukogram profile, specifically total leukocyte count, granulocytes, and lymphocytes, in Wistar rats (*Rattus norvegicus*) 14 days after induced spinal cord compression injury. The study used six Wistar rats, divided into two groups: a control group and a treatment group, each consisting of three rats. Rats in the treatment group underwent spinal cord compression injury through laminectomy followed by clamping of the spinal cord using hemostatic forceps for 10 seconds. After 14 days, blood samples were collected via the retro-orbital plexus and analyzed using a hematologic analyzer. Data were analyzed using the Shapiro-Wilk normality test and independent sample t-test. The results showed an increase in total leukocyte and granulocyte counts in the treatment group compared to the control group, at  $8.83 \times 10^3/\mu\text{L}$  and  $5.47 \times 10^3/\mu\text{L}$  versus  $5.57 \times 10^3/\mu\text{L}$  and  $2.30 \times 10^3/\mu\text{L}$ , respectively. Conversely, lymphocyte levels in the treatment group decreased to  $2.76 \times 10^3/\mu\text{L}$  compared to  $3.03 \times 10^3/\mu\text{L}$  in the control group. However, the differences between the groups were not statistically significant ( $p > 0.05$ ). These findings suggest that spinal cord compression injury may trigger a systemic inflammatory response reflected in leukogram alterations, although the changes were not statistically significant. Further hematological evaluations at multiple time points are recommended to better understand the dynamics of the immune response.

Key words: Spinal cord compression injury, granulocytes, leukocytes, lymphocyte,