

ABSTRAK

PENGARUH KOMPRESI MEDULA SPINALIS TERHADAP *Mean Corpuscular Volume, Mean Corpuscular Hemoglobin, DAN Mean Corpuscular Hemoglobin Concentration* TIKUS SETELAH 14 HARI

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Cedera medula spinalis atau *spinal cord injury* (SCI) adalah trauma pada tulang belakang yang menyebabkan lesi medula spinalis sehingga terjadi gangguan neurologik. Berkurangnya fungsi sensorik dan motorik merupakan tanda klinis utama pasca-SCI. Hal tersebut mengakibatkan paralisis, gangguan pernapasan, nyeri kronis, atrofi otot, dekubitus, dan disfungsi seksual. Penelitian ini bertujuan untuk mengetahui perbedaan profil *mean corpuscular volume* (MCV), *mean corpuscular hemoglobin* (MCH), dan *mean corpuscular hemoglobin concentration* (MCHC) antara kelompok tikus percobaan tanpa perlakuan dengan kelompok tikus percobaan trauma kompresi medula spinalis. Penelitian ini menggunakan enam ekor tikus laboratorium (*Rattus norvegicus*) galur Wistar dengan struktur anatomi normal, berjenis kelamin betina, berumur ± 1 bulan, dan memiliki berat badan ± 110 gram. Keenam ekor tikus dibagi menjadi dua kelompok sama rata yaitu kelompok kontrol dan kelompok perlakuan. Tikus kelompok perlakuan diberi perlakuan berupa laminektomi dan kompresi medula spinalis selama 10 detik menggunakan *hemostatic forceps* sesuai standar *International Spinal Cord Society*. Pengambilan sampel darah dilakukan 14 hari setelah perlakuan dan diperiksa menggunakan *hematology analyzer*. Analisis data dilakukan menggunakan uji normalitas Shapiro-Wilk dan uji parametrik T tidak berpasangan. Hasil analisis data menunjukkan terdapat penurunan signifikan ($p < 0,05$) kadar MCV antara tikus kelompok kontrol dengan tikus kelompok perlakuan dan tidak terdapat perbedaan signifikan ($p > 0,05$) kadar MCH dan MCHC antara tikus kelompok kontrol dengan tikus kelompok perlakuan. Kesimpulan penelitian ini adalah SCI berpengaruh signifikan terhadap kadar MCV dan tidak berpengaruh signifikan terhadap kadar MCH dan MCHC tikus dalam kurun waktu 14 hari pascatrauma kompresi medula spinalis.

Kata kunci: Cedera, Medula Spinalis, MCV, MCH, MCHC

ABSTRACT

THE EFFECT OF SPINAL CORD COMPRESSION ON MEAN CORPUSCULAR VOLUME, MEAN CORPUSCULAR HEMOGLOBIN, AND MEAN CORPUSCULAR HEMOGLOBIN CONCENTRATION IN RATS AFTER 14 DAYS

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Spinal Cord Injury (SCI) is trauma affecting to the spine that causes a lesion in the spinal cord, resulting in neurological impairment. Reduced sensory and motor functions are the primary clinical signs post-SCI. This leads to paralysis, respiratory disorders, chronic pain, muscle atrophy, decubitus, and sexual dysfunction. This study aims to determine the differences in mean corpuscular volume (MCV), mean corpuscular hemoglobin (MCH), and mean corpuscular hemoglobin concentration (MCHC) profiles between untreated experimental rats group and experimental rats group with spinal cord compression trauma. This study used six laboratory rats (*Rattus norvegicus*) of the Wistar strain with normal anatomical structure, female sex, aged ± 1 month, and weight ± 110 grams. The six rats were divided equally into two groups: a control group and a treatment group. The treatment group underwent laminectomy and spinal cord compression for 10 seconds using hemostatic forceps according to the International Spinal Cord Society standards. Blood samples were taken 14 days after treatment and analyzed using a hematology analyzer. Data analysis was performed using the Shapiro-Wilk normality test and an parametric independent T-test. The data analysis results showed a significant decrease ($p < 0.05$) in MCV levels between the control group and the treatment group, while there was no significant difference ($p > 0.05$) in MCH and MCHC levels between the control group and the treatment group. The conclusion of this study is that SCI significantly affects MCV levels but does not significantly affect MCH and MCHC levels in rats within 14 days post-spinal cord compression trauma.

Keywords: Injury, Spinal Cord, MCV, MCH, MCHC