

PERBEDAAN JUMLAH SEL NEUROGLIA TIKUS PUTIH (*Rattus norvegicus*) JANTAN PASKA INDUKSI BERBAGAI MODEL *SLEEP DEPRIVATION*

ABSTRAK

Stres akibat perlakuan *paradoxical sleep deprivation* (PSD) dan *total sleep deprivation* (TSD) mengganggu aksis HPA dan meningkatkan stres oksidatif sehingga kadar kortikosteron dan *reactive oxygen species* (ROS) meningkat yang mampu merusak sel neuroglia. Penelitian ini bertujuan mengetahui perbedaan jumlah sel neuroglia pada tikus putih (*Rattus norvegicus*) jantan pasca induksi berbagai model stres *sleep deprivation*. Metode penelitian menggunakan eksperimental dengan desain *posttest only with control group*. Tiga puluh ekor tikus putih dibagi secara acak menjadi 3 kelompok yaitu K.A (kontrol sehat), K.B (PSD 20 jam/hari selama 8 hari), dan K.C (TSD 24jam/hari selama 8 hari). Rerata jumlah sel neuroglia normal tertinggi terdapat pada K.A (126,00±48,81), diikuti K.B (97,78±28,17), dan terendah K.C (75,80±22,79). Uji *One Way ANOVA* menunjukkan perbedaan signifikan ($p < 0,05$) kemudian uji *Post-Hoc Bonferroni* menunjukkan perbedaan rerata signifikan ($p < 0,05$) pada kelompok A-C, dan tidak signifikan ($P > 0,05$) pada kelompok A-B dan B-C. Penelitian ini menunjukkan terdapat perbedaan signifikan jumlah sel neuroglia tikus putih (*Rattus norvegicus*) jantan pasca induksi berbagai model stres *sleep deprivation*.

Kata Kunci : *Paradoxical sleep deprivation* (PSD), *Rattus norvegicus*, Sel neuroglia, *Total sleep deprivation* (TSD).

**THE DIFFERENCE OF NUMBER OF NEUROGLIA CELL IN MALE
ALBINO RATS (*Rattus norvegicus*) AFTER INDUCTION VARIOUS
MODELS OF SLEEP DEPRIVATION**

ABSTRACT

Stress caused by sleep deprivation can cause disrupt of HPA axis, and increased oxidative stress which related with increased corticosterone and reactive oxygen species (ROS) thus leads to the loss of neuroglia. This study aims to know the difference of number of neuroglia cell in male albino rats (*Rattus norvegicus*) after the induction in various stress model of sleep deprivation. The research design used was a post test only with control group. Thirty male albino rats were distributed into 3 groups, K.A (health control), K.B (PSD 20 hours/day for 8 days), and K.C (TSD 24 hours/day for 8 days). Average of number of normal neuroglia cell in K.A had the highest rates (126,00±48,81), followed by K.B (97,78±28,17), and the lowest rates K.C (75,80±22,79). One Way ANOVA showed significant differences ($p < 0,05$) and Post-Hoc Bonferroni showed significant differences ($p < 0,05$) in group A-C, and insignificant ($P > 0,05$) in group A-B, and B-C. This study showed there was significant difference of number of neuroglia cell in male albino rats (*Rattus norvegicus*) after the induction in various stress model of sleep deprivation.

Keywords: Neuroglia cell, Paradoxical Sleep Deprivation, *Rattus norvegicus*, Total Sleep Deprivation.