

Effect of various inductions of sleep deprivation stress on proinflammatory cytokine levels in gingival crevicular fluids of white male Wistar strain rats (*Rattus novergicus*)

Title	Effect of various inductions of sleep deprivation stress on proinflammatory cytokine levels in gingival crevicular fluids of white male Wistar strain rats (<i>Rattus novergicus</i>)
Author Order	2 of 3
Accreditation	2
Abstract	<p>Background: Stress that is induced by sleep deprivation can modulate the damage of periodontal tissue by elevating the levels of proinflammatory cytokines (i.e. IL-1β and TNF-α). The effects of sleep deprivation can be resolved with sleep recovery. Gingival crevicular fluid (GCF) is fluid in sulcular gingiva which acts as an oral biomarker for evaluating periodontal abnormalities. Purpose: The aim of this study was to determine the effect of various induction methods of sleep deprivation stress on cytokine levels in GCF of white male Wistar strain rats (<i>Rattus novergicus</i>). Methods: The study method was true experimental with a posttest-only control group design. Thirty male Wistar rats were randomly divided into five groups: paradoxical sleep deprivation (PSD), total sleep deprivation (TSD), partial sleep deprivation with sleep recovery for five days (PSD+SR), total sleep deprivation with sleep recovery for five days (TSD+SR) and a healthy control group. Data were analysed via one-way ANOVA to determine differences between groups. Result: The results showed the highest level of IL-1β and TNF-α was found in the PSD group. One-way ANOVA analysis showed significant differences ($p < 0,05$) of IL-1β level between PSD and control groups, PSD and PSD+SR groups and PSD and TSD+SR groups; in contrast, the analysis of TNF-α levels showed significant differences ($p < 0,05$) between PSD group to control group, PSD to PSD+SR group and TSD to TSD+SR group. Conclusions: There is an effect of various induction methods of sleep deprivation stress on proinflammatory cytokines (IL-1β and TNF-α).</p>
Publisher Name	Faculty of Dental Medicine, Universitas Airlangga https://fkg.unair.ac.id/en
Publish Date	2020-03-31
Publish Year	2020
Doi	DOI: 10.20473/j.djmk.v53.i1.p24-29
Citation	
Source	Dental Journal (Majalah Kedokteran Gigi)
Source Issue	Vol 53, No 1 (2020): March 2020
Source Page	24-29
Url	https://e-journal.unair.ac.id/MKG/article/view/14573/9988
Author	Dr Dr FITRANTO ARJADI, S.Ked, M.Kes