

Paradoxical sleep deprivation changes testicular malondialdehyde and caspase-3 expression in male rats

Title	Paradoxical sleep deprivation changes testicular malondialdehyde and caspase-3 expression in male rats
Author Order	1 of 4
Accreditation	
Abstract	<p>BACKGROUNDSleep deprivation is a significant problem among adult men and is considered as a risk factor for several diseases. Paradoxical sleep deprivation (PSD) induces Leydig cell apoptosis through elevation of corticosterone, with testicular malondialdehyde (MDA) and Leydig cell caspase-3 expression as parameters. The aim of this study was to observe testicular MDA level and caspase-3 expression treated with paradoxical sleep deprivation (PSD), immobilization, and footshock stress and to determine the stress model with a significant effect in white male rats (<i>Rattus norvegicus</i>) .</p> <p>METHODSThis experimental randomized study of posttest only with control group design was conducted on 24 white male Wistar strain rats, randomly allocated into four treatment groups, i.e. control (K1) without any stress treatment, PSD (KII), immobilization (KIII), and footshock stress (KIV). Treatments were given for 25 days to produce chronic stress. Testicular MDA concentration was examined by the ELISA method while caspase-3 was examined by the TUNEL method.</p> <p>RESULTSMean testicular MDA concentration with one-way ANOVA test showed differences in means between the groups ($p=0.000$) and post hoc Tukey-HSD test showed significant results between PSD stress group versus control, immobilization and footshock stress groups. One-way ANOVA test showed a significant difference in caspase-3 expression in at least two treatment groups ($p=0.008$) and post-hoc Tuckey-LSD test showed significant differences between controls and all stress groups.</p> <p>CONCLUSIONSSleep deprivation is a type of stress inducing changes in testicular MDA concentration and caspase-3 expression in male rat testes.</p>
Publisher Name	Faculty of Medicine, Universitas Trisakti
Publish Date	2015-08-15
Publish Year	2015
Doi	DOI: 10.18051/UnivMed.2015.v34.87-95
Citation	
Source	Universa Medicina
Source Issue	Vol. 34 No. 2 (2015)
Source Page	87-95
Url	https://univmed.org/ejurnal/index.php/medicina/article/view/18/414
Author	Dr Dr FITRANTO ARJADI, S.Ked, M.Kes