Melatonin protective role in mouse cauda epipidymal spermatozoa damage induced by sodium arsenite [Rol protector de la melatonina en el daño de espermatozoides de cauda epididimaria en ratón producido por arsenito de sodio]

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We evaluated the sperm parameters such as cauda epididymis weight, sperm count, sperm morphology and sperm DNA stability of adult CF-1 male mice treated daily (oral exposure) with the toxic sodium arsenite (As, 7.0 mg/kg/body weight); Melatonin (Me, 10.0 mg/kg/bw), Me (10.0 mg/kg/bw) plus As (7.0 mg/kg/bw) and Negative Control (NaCl 0.9%) to assess acute (8.3 days), chronic (33.2 days) and recovery of testicular damage (66.4 days). Arsenic decreases the number of sperm from chronic treatment (33.2 days) and this effect continued until 66.4 days of treatment. The toxic effect of As also altered the morphology of spermatozoa in all treatment periods when compared to the negative control group. However, Metalonin induced protective effects in periods of 33.2 and 66.4 days of treatment. Additionally, the stability of DNA was significantly affected by arsenic in all periods, but the chronic treatment (33.2 days) in the AsMe revealed increased stability compared to the group treated with arsenic only. Melatonin partially protects sperm toxicity caused by Arsenic, especially during periods of 33.2 and 66.4 days.

Arsenic

DNA stability

Melatonin

Mouse

Sperm