Induction of depressive-like and anxiety-like effects by sub-chronic exposure to lead in Wistar rats

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The main objective of this work is to study the effect of lead chloride on anxiety and depression behavior in male and female Wistar rats. The experimental study is carried on young rats. The animals are divided into four experimental lots, control lot and 3 lots exposed to successive doses of 0.25 mg/kg, 0.5 mg/kg and 1 mg/kg of lead chloride. The metal is administered daily at 16:00 by intraperitoneal injection for duration of eight weeks. At the end of the various treatments, the animals were subjected to the open field test (OFT), elevated plus maze (EPM) test to determine the levels of anxiety, and the forced swimming test (FST) to elucidate the levels of depression. The results showed that the anxiety and depression behaviors are clearly expressed in rats poisoned by lead chloride compared to the control with a significant difference for both sexes, which suggests that this metal induces anxiogenic effects and depressive. In addition, the acuity of depression and anxiety is accentuated, as the concentration of lead increased, indicating that lead has a dose-dependent effect. Our results confirm that lead causes behavioral effects such as anxiety and depression.

Biography

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