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Alteration of Pentylenetetrazol-induced kindling parameters by prenatal chronic Lead exposure in rats

Kebriyaei Zadeh A, Massihaye Akbar R, Soltani Nejad K

Abstract:

The effect of prenatal chronic lead exposure on pentylenetetrazol (PTZ)-induced kindling parameters (seizure index, seizure latency and seizure stage) in rats was studied. Adult female rats with a weight range of 140-180 g were selected and pretreated with lead acetate (0.05% w/v) orally, 25 days prior to mating. The control group was given distilled water containing sodium acetate solution (0.05% w/v). After delivery, treatment was ceased, and after lactation, male neonates were separated from the females in both groups. After maturation of male rats, the PTZ-kindling was induced by daily interapritoneally injection of PTZ (30 mg/kg). Kindling parameters in the control and treated groups were determined. The results indicated that animals with prenatal lead exposure have full kindling state with 9-19 (16.87±1.54) injections, whereas this value for control group was 12-23 (18.62±1.48) injections. The seizure latency for the treated group was lower ($P<0.05$) than the control (2.29±0.44 min versus 3.65±0.45 min). The seizure severity (regarding to seizure index) was statistically higher in the treated group ($P<0.05$). The seizure stages were also different in the treated and control groups ($P<0.05$). The seizure frequency of first and second stages of kindling in the control group was higher than that of treated one ($P<0.05$). Also the seizure frequency in the third and fourth kindling stages of case group was higher than controls ($P<0.05$). It is concluded that prenatal lead exposure alters seizure susceptibility in rat PTZ-Kindling model.

Keywords:

PTZ ، Kindling ، Prenatal

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