

عنوان مقاله:

The effects of gestational and lactational exposure to Nonylphenol on c-jun, and c-fos expression and learning and memory in hippocampus of male F1 rat

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خلاصه مقاله:

Objective(s): To investigate the effects of Nonylphenol (NP) in pups from dams exposed during gestational and lactational periods on immediate early genes (c-jun, c-fos) in hippocampus and the learning and memory of F1 rats. **Materials and Methods:** Twenty eight pregnant dams, stratified by pregnancy date, were randomly assigned into ۴ groups, which were gavaged with NP at the doses of ۵۰ mg/kg/day, ۱۰۰ mg/kg/day, ۲۰۰ mg/kg/day and groundnut oil, respectively. Step-down avoidance test, and learning and memory effects of NP were evaluated on ۸-weeks-old pups. The expressions of c-jun and c-fos and the activities of choline acetyltransferase (ChAT) and acetylcholinesterase (AChE) were evaluated in hippocampus of pups. **Results:** Compared to the control, reaction time (RT) that pups spent to jump to the platform was longer ($P=0.02$), the number of errors were higher ($P=0.01$), and the step-down latency was shorter in the ۲۰۰ mg/kg/day NP-treated group ($P=0.04$). Exposure to NP induced a significant reduction in ChAT activity in hippocampus in the ۱۰۰ ($P=0.005$) and ۲۰۰ mg/kg/day NP-treated groups ($P=0.002$), whereas exposure to ۲۰۰ mg/kg/day caused a significant increase in AChE activity ($P=0.004$); a dose-response relationship was revealed between ChAT and AChE activities and NP exposure in the hippocampus of pups ($r=-0.821$, $P=0.01$; $r=0.757$, $P=0.04$). Exposure to NP in the ۱۰۰ and ۲۰۰ mg/kg/day NP-treated groups exhibited an increase in number of c-fos and c-jun positive cells. **Conclusion:** Exposure to NP might negatively affect learning and memory ability in F1 rats, possibly due to the alterations in the expression of c-jun and c-fos, and ChAT, AChE activities in hippocampus of pups

کلمات کلیدی:

Learning and memory, Neurotransmitters Nonylphenol, Pups

