Low doses of methylmercury intoxication solely or associated to ethanol binge drinking induce psychiatric-like disorders in adolescent female rats.

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Abstract
Methylmercury (MeHg) is an environmental contaminant that provokes damage to developing brain. Simultaneously, the consumption of ethanol among adolescents has increased. Evidence concerning the effects of MeHg low doses per se or associated with ethanol during adolescence are scarce. Thus, we investigate behavioral disorders resulted from exposure to MeHg low doses and co-intoxicated with ethanol in adolescent rats. Wistar rats received chronic exposure to low doses of MeHg (40 μg/kg/day for 5 weeks) and/or ethanol binge drinking (3 g/kg/day at 3 days per week for 5 weeks). Animals were submitted to behavioral assays to assess emotionality and cognitive function. Total mercury content was evaluated in the brain and hair. Oxidative parameters were analyzed in blood samples. MeHg at low doses or associated to ethanol binge drinking produced psychiatric-like disorders and cognitive impairment. Peripherally, MeHg altered oxidative parameters when associated to ethanol. Ethanol administration reduced brain mercury deposit. We proposed that ethanol reduces the necessity of mercury tissue levels to display psychiatric-like disorders/cognitive impairment.

KEYWORDS: Adolescence; Behavior; Ethanol; Methylmercury; Rat