

Original Article

Alterations in tissue and hepatic enzymes in male rats born to mothers treated with haloperidol

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Abstract

Background and Objective: Liver is an important organ with specific function in relation to drug metabolism. Haloperidol is a drug for the treatment of schizophrenia, mania in bipolar disorder and dizziness. This study was performed to determine the changes in tissue and hepatic enzymes in male rats born to mothers treated with haloperidol.

Methods: In this experimental study, 25 adult female Wistar rats were allocated into 5 groups. The control group, the sham group and experimental groups 1, 2, 3. Dams in experimental groups 1, 2, 3 in the pregnancy period were received 12.5, 25, 50 mg/kg /bw of haloperidol for 21 days orally, respectively. The control groups were sham and three experimental, first, second and third experimental groups. Mothers of mice received 12.5, 25 and 50 mg/kg of haloperidol during the pregnancy as 21 days of gavage. At the end of pregnancy and 22 days of infant, all infants were weighed. Alanine aminotransferase (ALT), alkaline phosphatase (ALP) and aspartate transaminase (AST), albumin and total protein were measured by autoanalysis and liver tissues were stained using hepatoxilin-eosin method.

Results: The mean concentration of albumin and total protein in the second and third experimental groups significantly reduced in compare to control group ($P<0.05$). The mean concentration of AST in the second and third experimental groups significantly increased in comparison with control group ($P<0.05$). The mean concentration of ALT and ALP in all experimental groups was significantly higher than the control group ($P<0.05$). The mean of liver indices in all experimental groups was not significant in comparison with the control group. In the tissue samples of the experimental groups, necrosis was observed with increasing dosage.

Conclusion: Haloperidol has been shown to increase liver enzymes and liver necrosis and increase liver necrosis in a dose-proportional manner.

Keywords: Liver, Haloperidol, Liver Enzymes, Necrosis, Rat

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