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The Effect of Acute and Chronic Ethanol Administration on Prolactin Secretion in Male Rats

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The effect of acute and chronic administration of ethanol on prolactin secretion in male rats was investigated under basal conditions and after the administration of sulpiride. The effect of ethanol on the activity of glutamic acid decarboxylase (GAD) in the hypothalamus was also examined. Acute administration of ethanol significantly increased serum prolactin levels. This increase persisted after sulpiride administration. In contrast, chronic administration of ethanol did not significantly modify serum prolactin levels. However, the elevation of prolactin levels in response to the injection of sulpiride was significantly lower in rats chronically treated with ethanol than in control animals. Pituitary concentration of prolactin was not significantly modified by acute or chronic administration of ethanol. Sulpiride administration failed to reduce the concentration of prolactin in the pituitary of rats acutely treated with ethanol, in contrast to its effect in control rats. Acute administration of ethanol significantly decreased hypothalamic GAD activity, while chronic ethanol treatment caused an increase in GAD activity in the hypothalamus. These results indicate that ethanol can alter prolactin secretion and the synthesis of GABA in the hypothalamus.

Key words: ethanol, prolactin, glutamate decarboxylase

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