

عنوان مقاله:

Mirtazapine may show anti-hyperglycemic effect by decreasing GLUT2 through leptin and galanin expressions in the liver of type 1 diabetic rats

محل انتشار:

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خلاصه مقاله:

Objective(s): The aim of this study was to explore the molecular mechanism of mirtazapine with respect to energy metabolism in Streptozotocin-induced diabetic liver of rats by immunohistochemistry and Western blot. **Materials and Methods:** Twenty-one male Sprague-Dawley rats were assigned into 3 groups including control, type 1 diabetes mellitus (T1DM) group (55 mg/kg Streptozocin, IP) and T1DM+mirtazapine (20 mg/kg, PO) group. At the end of the experiment, blood glucose levels were measured and liver tissues were stained by Periodic acid-Schiff. Moreover, leptin and glucose transporter 2 (GLUT2) proteins were analyzed by western blot and immunohistochemistry; however, galanin were analyzed only by immunohistochemistry. **Results:** At the end of the study, in diabetes group, blood glucose level, GLUT2 and galanin expressions increased, while leptin expression decreased when compared to control group. Mirtazapine treatment restored the decreased leptin expression, and the increased blood glucose level and galanine expression to the level of the control group. It also decreased the GLUT2 expression even below the control group. **Conclusion:** We concluded that mirtazapine may show its anti-hyperglycemic effect by decreasing GLUT2 through altering the leptin and galanin expression in the liver of type 1 diabetic rats. Mirtazapine can be used as an antidepressant for T1DM patients and as a drug to reduce blood glucose level in T1DM.

کلمات کلیدی:

Galanin, GLUT2, Leptin, Liver, Mirtazapine, Type 1 Diabetes Mellitus

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