عنوان مقاله:

Effect of alpha-mangostin on olanzapine-induced metabolic disorders in rats

محل انتشار:

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خلاصه مقاله:

Objective(s): As olanzapine has side effects such as weight gain and metabolic disorders, and alpha-mangostin has been shown to control metabolic disorders, the effects of alpha-mangostin on metabolic disorders induced by olanzapine were investigated in this study.Materials and Methods: Obesity was induced in female Wistar rats by daily administration of olanzapine (۵ mg/kg/day, IP, ۱۴ days). Rats were divided into ۶ groups:۱) vehicle (control); ۲) olanzapine (۵ mg/kg/day); ۳,۴,۵) olanzapine+ alpha-mangostin (۱۰, ۲۰, ۴۰ mg/kg/day, IP); ۶) alpha-mangostin (۴۰ mg/kg/day). Weight changes were measured every ۳ days and food intake was assessed every day. Systolic blood pressure, plasma levels of blood sugar, triglycerides, total cholesterol, HDL, LDL, leptin, oxidative stress markers (MDA, GSH), AMPK, and P-AMPK protein levels in liver tissue were assessed on the last day of the study. Results: Administration of olanzapine significantly increased weight gain, food intake, blood pressure, triglycerides, LDL, blood sugar, leptin, and MDA in rat liver tissue and also decreased GSH, AMPK, and P-AMPK in liver tissue compared with the control group. Different doses of alpha-mangostin significantly reduced weight gain, food intake, systolic blood pressure, triglycerides, LDL, blood sugar, leptin, and MDA. Also, they significantly increased GSH, AMPK, and P-AMPK in liver tissue compared with the olanzapine group.Conclusion: Olanzapine increases leptin levels, food intake, and weight, induces oxidative stress, decreases the levels of AMPK and P-AMPK proteins in liver tissue, and causes metabolic disorders. But, alpha-mangostin reduces the negative effects of olanzapine by activation of AMPK.

کلمات کلیدی:

Anti-Oxidants, Leptin, Liver, Mangostin, metabolic syndrome, Obesity, Olanzapine, Weight gain