

عنوان مقاله:

Role of natural products in mitigation of toxic effects of methamphetamine: A review of in vitro and in vivo studies

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خلاصه مقاله:

Objective: Methamphetamine (METH) increases dopamine, norepinephrine and serotonin concentrations in the synaptic cleft, and induces hyperactivity. The current management of acute METH poisoning relies on supportive care and no specific antidote is available for treatment. The main objective of this review was to present the evidence for effectiveness of the herbal medicine in alleviating the adverse effects of METH abuse. Materials and Methods: Literature search was performed using the following electronic databases: MEDLINE, Scopus, PubMed and EMBASE. Results: Plant-derived natural products ginseng and sauchinone reduced METH-induced hyperactivity, conditioned place preference and neurological disorder. Garcinia kola decreased METH-induced hepatotoxicity, raised METH lethal dose, and restored the METH-impaired cognitive function. Repeated administration of baicalein resulted in attenuation of acute binge METH-induced amnesia via dopamine receptors. Activation of extracellular-regulated kinase in the hypothalamus by levo-tetrahydropalmatine facilitated the extinction of METH-induced conditioned place preference and reduced the hyperactivity. Other herbal medicine from various parts of the world were also discussed including hispidulin, silymarin, limonene, resveratrol, chlorogenic acid and barakol. Conclusion: Based on the current study, some natural products such as ginseng and levo-tetrahydropalmatine are promising candidates to treat METH abuse and poisoning. However, clinical trials are needed to confirm these finding.

کلمات کلیدی:

Addiction, Herb, Methamphetamine, Toxicity

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