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Therapeutic effects of crude and degummed *Citrullus lanatus* seed oil on candidiasis in immunosuppressed rats

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Vegetable oil has become an integral part of our diet, but relatively little is known about their antifungal potential. The present work was designed to evaluate the therapeutic efficacy of crude and degummed *Citrullus lanatus* (Watermelon) seed oil (CLSO) in the treatment of experimental oral candidiasis induced by *Candida albicans* in immunosuppressed rats. This anticandidal activity was analyzed by microbiological and histopathological techniques at days 7 and 14; it was compared with that of fluconazole, which was used as a positive control. Microbiologically, CLSO significantly ($p < 0.05$) reduced the number of Colony Forming Units (CFU) sampled from the kidney tissue of rats treated for fourteen consecutive days, compared to group 3 (untreated control) rats. Treatment with fluconazole gave similar results at day 7 but exacerbated at day 14. Histologically, group 3 showed multifocal aggregation and widespread distribution of fungal blastospores (arrow) appearing singly or in small clusters within the renal parenchyma. While minimal fungal blastospores present in the renal parenchyma; fungal blastospores appearing singly within the glomeruli and renal tubules was seen in CLSO-treated animals, but minimal blastospore was less in degummed CLSO than in crude CLSO. Thus, the histological data were confirmed by the microbiological tests for crude and degummed CLSO, but not for the fluconazole-treated group which showed multifocal and widespread distribution of blastospores at day 14. Therefore, CLSO could be considered as an antifungal agent with degummed CLSO being more potent and could be proposed as therapeutic agents for oral candidiasis.

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Urtica dioica distillate (*Aragh Gazaneh*) restores altered glucose metabolism in diabetic rats

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Background: *Urtica dioica* (UD) is well known as a hypoglycemic plant. While the anti-diabetic properties of its extract is well studied, there are not any published reports regarding its distillate, a drink widely being used in different areas of Iran according to Traditional Iranian Medicine for treating diabetic patients.

Materials and methods: To justify the use of UD distillate (UDD) for treatment of diabetes, a series of experiments were performed on 24 male rats. The groups consisted of two treatment and two control groups, each one containing normal and diabetic rats. During 4 weeks, the rats in the treatment and control groups received UDD and water by gavage, respectively. Every nine days, the rats were weighted and their fasting blood glucose (FBS) values were measured. Following 4 weeks of treatment, all the rats were sacrificed for further experiments. FBS, serum insulin levels and the specific activity of hepatic enzymes including glucokinase, hexokinase and glucose 6-phosphate dehydrogenase were measured using standard methods.

Results and discussion: The amount of insulin secretion and also the specific activities of hepatic enzymes were significantly increased in the treated diabetic group. A significant decrease was also observed in the blood glucose of the treated diabetic rats compared to the diabetic control ones. UDD consumption by diabetic treated rats not only prevented weight loss but also caused a dramatic weight gain. Therefore, these results suggested that UDD administration could improve diabetic conditions by enhancing insulin secretion and liver glucose metabolizing enzymes' activity and could be used as an anti-diabetic drink as well.

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