EFFECT OF SOME DRUGS AND HERBS ON RATS SUFFERING FROM OBESITY.

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The present study investigated the effect of some drugs (Orlistat and Chitosan) and herbs (Neopuntia and Jamu Tea) on weight, lipid profile, glucose, liver function and kidney functions of obese rats fed on high fat diet. Healthy male albino rats weighing (200±5 g) were divided into two main groups. The first group (n = 6) fed on a basal diet B.D., while the second main group 30 rats were fed for 6 weeks on high fat diet. The high-fat diet (HFD) was prepared using beef tallow 19%, soybean oil 1% to provide essential fatty acids, sucrose 10%, and casein 20% to induce the obesity in rats. After these periods, rats were divided into 5 subgroups (n = 6). Subgroup (1) fed on high fat and high protein diet (20% fat and 20% protein) as a positive control. Subgroup (2) fed on high fat and high protein diet and treated daily with 5 mg orlistat/ rat. Subgroup (3) fed on high fat and high protein diet and treated daily with 5 mg chitosan/ rat. Subgroup (4) fed on high fat and high protein diet and treated daily with 5 mg Neopuntia/ rat. Subgroup (5) fed on high fat and high protein diet and treated daily with 5 ml Jamu tea/ rat. Body weight was decreased due to all treatments. All parameters of lipid profile (cholesterol, triglycerides, HDL-c, LDL-c and VLDL-c), liver function (AST & ALT enzymes), glucose and kidney functions improved with treated the obese rats with Orlistat, Chitosan, Neopuntia and Jamu Tea, especially when using 5 mg orlistat/ rat followed by 5 mg chitosan / rat, and other herbs (Neopuntia and Jamu Tea), respectively. It was concluded that, treating obese rats which fed on high fat and high protein diet with Orlistat, Chitosan, Neopuntia and Jamu Tea decreased the weight of obese rats and improved the body functions.

Key words: rats, obese, Orlistat, Chitosan, Neopuntia and Jamu Tea, lipid profile, liver functions, glucose and kidney function.

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References:


WHO. Obesity and overweight fact sheet. 2006, Sep,


The present work was conducted to study the beneficial effect of different types of fish on diabetic rats and diabetic rats treated with insulin. This study investigated the chemical composition of four types of fish (Mackerel, Sardines, Smoked herring and Bolti) and also the effects of these types on the nutritional value and the levels of serum (glucose, lipid fractions, kidney and liver functions) of diabetic rats. The chemical composition "on dry bases matter" of processed fish types revealed that the bolti fish had the highest percent of protein, while the highest percent of fat was found in mackerel and sardines. The mackerel had the highest percentage of polyunsaturated fatty acid, followed by sardines, herring and bolti. Seventyfive male Albino rats used in this study, weighing (150 +/- 5 g) were divided into three main groups (n = 25). The first main group was considered negative control. The second main group was injected with 150-mg/kg-body weight of recrystallized alloxan to induce hyperglycemia. The third main group was injected with 150-mg/kg-body weight of recrystallized alloxan to induce hyperglycemia and treated with insulin injection. Each main group was divided into five subgroups. The first subgroup from each main group fed on a casein diet, while the second, third, fourth and fifth subgroups fed on basal diet containing mackerel, sardines, herring and bolti, respectively. Feeding diabetic rats with the different types of diet (fish diet) resulted in an improvement of the nutritional parameters. The mean values of serum glucose, cholesterol, triglycerides, LDL-c, HDL-c, VLDL-c, uric acid, urea nitrogen, aspartate amino transferase (AST) and alanine amino transferase (ALT) decreased in all treated groups especially with the mackerel and sardine diet, followed by bolti, as compared to the positive control groups (fed on a casein diet), while the levels of serum cholesterol and LDL-c increased in the groups fed on the herring diet. On the other hand, diabetic rats that were treated with a low insulin dose and fed on the mackerel diet, showed non-significant differences in the levels of all parameters, as compared to non-diabetic rats.

Keywords: mackerel; sardine; fish; diet; diabetic rat; rat; diabetic; main group; insulin; fed; group; LDL-c; alloxan.


REFERENCES:


