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## Regulation of obesity and insulin resistance by *Foeniculum vulgare* and *Anethum graveolens* extract in high-fat diet-induced obese rats

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Obesity is a risk factor for developing insulin insensitivity and cardiovascular disease. Adiponectin is a serum protein that is secreted primarily from adipose tissue, with concentrations that are inversely correlated to the body mass index (BMI). Leptin and proinflammatory interleukin-6 (IL-6) are directly proportional with obesity. Natural products *Foeniculum vulgare* and *Anethum graveolens* have been reported to have hypoglycemic and insulin-sensitizing activities. In this paper, we explored the effects of combined extract of *Foeniculum vulgare* and *Anethum graveolens* on HFD-induced obesity in rats. We randomly divided Sprague-Dawley male rats into four groups: Control, high fat diet (HFD), HFD with the combined extract (0.045 g/kg/day) and HFD with the combined extract (0.45 g/kg/day) groups. Diabetic profile parameters (fasting blood glucose level, serum insulin, HOMA-IR), rat weight, total cholesterol, triglyceride, HDL-C, LDL-C, liver function, kidney function, adiponectin, leptin, IL-6, liver malondialdehyde, glutathione and glutathione peroxidase activity were measured in all groups. Feeding rats HFD for 8 weeks developed features of insulin resistance. These features presented in increased body weight, hyperglycemia, hyperinsulinemia, hypercholesterolemia (with increased LDL-Cholesterol and decreased HDL-Cholesterol) and hypertriglyceridemia and also decreased adiponectin levels and increased leptin and IL-6 levels and decreased glutathione and glutathione peroxidase activity. The combined extract (both doses) treatment decreased fasting glucose significantly, improved levels of diabetic profile parameters, lipid profile, liver and kidney function and elevated adiponectin, decreased leptin and IL-6 and decreased oxidative stress. Our results suggested that the combined extract of *Foeniculum vulgare* and *Anethum graveolens* is a unique natural medicine against obesity.

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## The effect of telephone reminder in physical activity amount and motivation: A randomized clinical trial

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This double blind randomized clinical trial aimed to evaluate the effect of phone reminder plus exercise prescription on physical activity amount, motivation and anthropometric parameters in patients who want to lose weight. The inclusion criteria were: BMI $\geq$ 25, no participation in any exercise in last three months, no contraindication for aerobic exercise, no taking noninvasive methods during last 6 months, no bariatric surgery during last year and agreement to not take other weight loss method during the study. Forty-six patients were randomized in to two groups by computerized randomization in exercise prescription or exercise prescription plus 10 minutes telephone reminder a week. The first group did 30 minutes moderate walking (50% of heart rate reserve) 5 days a week. The second group did exercise like the first group but they were called by the researcher who remembered doing the prescribed exercise. Both groups took the same amount of calorie. Anthropometric parameters (weight, height, BMI, waist circumference, thigh circumference, pelvic circumference and body fat percentage), motivation and physical activity amount were measured before, one and three months after intervention. Physical activity and attitude were measured by international physical activity questionnaire (IPAQ) and motivation questionnaire, respectively. Body fat percentage was measured by bio impedance analyzer (BIA). Mean of motivation and physical activity score was increased in both groups after 3 months which was statistically significant (p-value <0.05). The anthropometric parameters did not change after 3 months in both groups. Mean difference of physical activity, attitude and anthropometric parameters after 3 months, was not significant between two groups (p-value >0.05). Ten minutes a week telephone reminder could not change the physical activity motivation, physical activity amount and anthropometric parameters in patients who take exercise prescription for weight loss.

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