Preventive effect of Nigella sativa on metabolic syndrome in menopause induced rats.

ABSTRACT

In women facing menopause, end of menstrual activity is accompanied by lower levels of estrogen and gradual weight gain. Postmenopausal weight gain sounds an alarm for women's health and may lead to hyperlipidemia, a lipid increase and glucose intolerance. These phenomena are connected to lifestyle-related diseases such as hypertension, type II diabetes mellitus, arteriosclerosis and metabolic syndrome, making it essential to prevent weight gain in women. This study was conducted using an ovariectomized rat model to determine the metabolic impact of Nigella sativa in experimental menopause induced rats.Forty ovariectomized Sprague Dawley rats, weighting 250 to 350 g were used in the study and randomly allotted into one of five experimental groups. Animals were given either different doses of N. sativa (300, 600, 1200 mg/kg/day) as treatment groups or distilled water (1 ml) and conjugated equine estrogen (CEE) (200 μg/kg/day) by intra-gastric gavage as negative and positive control group respectively for 21 days. Food and water intake were measured daily and body weight and biochemical parameters were measured at baseline, 11th day and at the end of experiment. The treatment groups showed significant ($P < 0.05$) improvement with reference to daily body weight gain, low density lipoprotein cholesterol (LDL-C), high density lipoprotein cholesterol (HDL-C), and blood glucose ($P < 0.05$). There were no significant differences between groups in serum triglyceride concentration. These results suggested that treatment with N. sativa exert a therapeutic and protective effect by modifying weight gain, improving lipid profile and blood glucose as well as hormonal level which is believed to play an important role in the pathogenesis of metabolic syndrome during menopause.

Keyword: Menopause; Metabolic syndrome; Nigella sativa; Ovariectomized rats.