Dietary modification with high salt attenuates obesity and hyperlipidemia in high fat induced obese mice

Mohammad Salim Hossain
Noakhali Science and Technology University, Bangladesh

The prevalence of obesity is an alarming condition for mortality and morbidity leading to other lifestyle-related diseases worldwide. Finding out the new way to combat obesity is the most warrant. The aim of the present study was to investigate the effect of a modified diet with high-salt (4% NaCl) on fat deposition in high-fat diet induced obese mice. Forty healthy Swiss Albino mice (Sex: Female) were taken and divided equally into two groups named as a non-obese group and obese group. In the case of a non-obese group, mice were fed a normal diet, normal diet along with high-salt, high-fat diet, and high-fat diet along with high-salt for 6 weeks. On another hand, to induce obesity, mice were fed high-fat for 2 weeks and then treated with high-fat diet along with high-salt, normal diet, normal diet along with high-salt again for 6 weeks. The effects of these treatments on body weight, feed intake, Lee index, organs weight and levels of serum triglycerides (TGs), total cholesterol (TC), high density lipoprotein-cholesterol (HDL-C), low density lipoprotein-cholesterol (LDL-C), SGOT and SGPT, and atherogenic index of plasma (AIP) were analysed. In case of non-obese group, treatment with high-fat diet along with high-salt showed a significant decrease in body weight (p<0.05), organs weight (liver, heart, and abdominal fat) (p<0.05), serum TG, TC, LDL-C (p<0.01) levels, AIP (p<0.01), SGOT and SGPT levels (p<0.05) whereas significant elevation was noticed in HDL-C (p<0.05) level compared to the HFD group. Furthermore, in case of obese group treatment with high-fat diet along with high-salt and normal diet along with high-salt showed a significant declination in body weight (p<0.05), Lee index (p<0.05), organs weight (liver, heart, and abdominal fat) (p<0.05), serum TG, TC, LDL-C (p<0.01) levels, AIP (p<0.01), SGOT and SGPT levels (p<0.05) whereas significant elevation was noticed in HDL-C (p<0.01) level compared to the Obese control group. From the observations of the study performed, it could be predicted that high salt (4% NaCl) diet has an inhibitory action on fat absorption which may be effective to attenuate the obesity and obesity-related parameters.

pharmasalim@yahoo.com