EFFECT OF CHLOROQUINE ON INSULIN RESISTANCE INDUCED BY HIGH FAT DIET IN RATS

Ahmed F. Bahriz, Mahmoud M. El-Fouly and Mohamed E. Mansour
Department of Pharmacology, Benha Faculty of Medicine, Zagazig University

ABSTRACT

Thirty albino rats weighing from 100 to 150 gm were randomly divided into 3 groups, the first group fed standard balanced diet, the second group fed high fat diet and the third group fed high fat diet but in addition each rat in this group received chloroquine in a daily dose of 90mg/kg orally.

After 8 weeks of these dietary regimens, the rats were decapitated and soleus muscle and epididymal or parametrial fat were taken from all animals in each group. Both basal and insulin stimulated glucose uptake was estimated in every tissue. The levels of glucose, insulin, total cholesterol, triglycerides, high density lipoprotein (HDL) cholesterol and low density lipoprotein (LDL) cholesterol in the serum of each rat were also evaluated.

Results of the present work showed that persistent intake of fat rich diet significantly reduced the basal and insulin stimulated glucose uptake by both muscle and fat tissues. Furthermore, there were also significant increases in the fasting serum concentrations of glucose, total cholesterol, triglycerides and LDL. On the other hand, significant reductions in the levels of fasting serum insulin and HDL were also observed.