ABSTRACT

The aim of the present study was to elucidate the possible biochemical in lipid metabolic profile and organ function profiles that may result from continuous treatment with sildenafil in normal albino rats and those rendered hyperlipidemic by long term supplementation of fat and cholesterol-enriched diet. Albino rats of both sexes were used and grouped into seven groups; each consists of ten animals with different treatments. Rats of group-i were fed on normal diet; those of group-ii were fed on cholesterol (1%) and fat (2%)-enriched diet; those in group-iii were fed on normal diet and received sildenafil (5.625 mg/kg b. wt., orally, daily) after 30 days from the start of the experiment; those of group-iv were fed on cholesterol and fat-enriched diet and received sildenafil after 30 days from the start of the experiment; those of group-v were fed on cholesterol and fat-enriched diet and received sildenafil from the start of the experiment; those of group-vi were fed on cholesterol and fat-enriched diet and received atorvastatin (1.8 mg/kg. b. wt, orally, daily) after 30 days from the start of the experiment; while those of group-vii were fed on cholesterol and fat-enriched diet and received ezetimibe (1 mg/kg b. wt.) after 30 days from the start of the experiment. Blood samples were taken for biochemical analysis on days 30, 45 and 60 of the experiment. Sildenafil significantly decreased the serum lipid parameters including total lipid, triglycerides, cholesterol, HDL-C, LDL-C, VLDL-C concentrations of rats fed on fat- and cholesterol-enriched diet. However, it increased their values in serum of negative control rats. In addition, administration of sildenafil to normal rats caused insignificant changes in serum liver enzymes ALT and AST concentrations all over the period of the experiment; as well as serum urea and creatinine; yet, it significantly decreased their serum concentrations in
animals fed on fat- and cholesterol-enriched diet compared to the +ve untreated ones, upon its administration starting from the day 30th of the experiment. However, concurrent administration of sildenafil with high fat and cholesterol diet (group-iv) failed to guard against the rise in such liver and kidney function biomarkers. These data suggest that sildenafil may act as a mixed blessing drug; therefore it must be used carefully and under physician supervision to get its therapeutic benefits and guard against its adverse effects.