Abstract

Diabetes mellitus is a worldwide metabolic condition that impacts different organs. Oxidative damage caused by oxygen radicals, and it is the major cause of diabetes. The goal of this research was to examine that zinc oxide nanoparticles (ZnONPs) have an anti-diabetic effect in alloxan-induced diabetic mice and analyse the outcomes to the standard drug glibenclamide.

The co-precipitation approach was used to chemically produce the ZnONPs. ZnONPs were studied using Ultraviolet-visible,scanning electron microscopy (SEM) and X-ray diffraction (XRD).. In this work, alloxan-induced diabetic albino mice were used to compare diabetes's consequences on animals to the treated group of mice utilising ZnONPs. Using Statistix 10 software, the data was statistically assessed using ANOVA and shown as mean standard deviation.

After 28 days of therapy, the blood glucose concentration in the ZnONPs treated was group lower than in the other groups, according to the biochemical test. The liver functional tests (LFTs), which include Alanine Transaminase (ALT) and Aspartate Aminotransferase (AST), in the ZnONPS-treated mice group showed the greatest improvement compared to the group of diabetic mice. The histopathological results of liver, kidney and pancreas showed best results of the group treated with ZnONPs.