

ABSTRACT

As diabetes mellitus has a great economic burden all around the world, it is extremely necessary to formulate economical treatment along with fewer side effects. The present study demonstrates the use of *Withania Coagulans* extract as a herbal medicine, silver nanoparticles and zinc oxide nanoparticles as nanomedicines, individually as well as their combined anti-hyperglycemic effect. All the treatments of the study were compared with commercially available medicines. Therefore, maximum percentage of decrease was observed by the combined treatment of zinc oxide nanoparticles (3mg/kg) with the combination of *Withania Coagulans* extract (500mg/kg) of 66.20 ± 3.48 found to be more effective than commercially available medicines, Amaryl (46.40 ± 4.27) and Glucophage (30.60 ± 2.82). Analysis of body weight changes in experimental mice was also observed. Maximum decrease observed was of 2.18g by zinc oxide nanoparticles (10mg/kg) while an increase in body weight was observed in positive control. Results suggest that combined treatment of zinc oxide nanoparticles and *Withania Coagulans* extract could be a potent anti-hyperglycemic agent.