Journal of Clinical Research in Diabetes and Medicine

J Clin Res Diabetes Med 2020

Chemical Constituents, Cytotoxicity and Hyperglycemic effect of the Leaves of Solanum Nigrum L

Isaac John Umaru

Christopher Emeka Ahuchaogu, Hauwa

Abstract:

Introduction: Plants being the most reliable source of food to human have also been used as folk medicine for centuries and as medicinal remedies in health care systems even with the advancement in technology. Diabetes mellitus is a heterogeneous group of metabolic disorder characterized by high blood glucose level. The pancreatic β-cells and its secretary hormone i.e. insulin are central in the pathophysiology of Diabetes. The aims of this study was to isolate the chemical constituents, test the cytotoxicity of the crude extract and evaluate the hyperglycaemic effects of the *Solanum Nigrum* leaves crude extract. **Materials and Methods:** The extraction was carried out by conventional extraction by soaking the powdered sample in solvent 1:3 (sample: solvent) in hexane, dichloromethane, chloroform, ethyl acetate and methanol, Cytotoxicity test using Brine shrimp (*Artemia salina*), and hyperglycaemic evaluation using Alloxan was used intraperitoneally to induce diabetic in albino rats, treatment group including glibenclamide (71 µg/kg) and pioglitazone (429 µg/kg), were considered in the study. The effect of the crude extract on glucose, other biochemical, and the hematological parameters were evaluated. **Results:** Diabetic control was on the days 7 of the study with 100, 200, 300, 400 and 500 mg/kg of the extract showing a glucose reduction of 85.44±46.22 µg/mL, 79.39±15.11 µg/mL, 67.16±12.22 µg/mL, 62.21±15.46 µg/mL, and 44.56±35.12 µg/mL as significant. The isolated compound Berberine. Indicated significant hyperglycemic. **Conclusion:** This study showed that *Solanum Nigrum L* has an anti-hyperglycemic activity and this is also attributed as result of some active chemical constituents play an important role in the management of Diabetes mellitus in the extract such as berberine. This study was carried out for the first time of *Solanum Nigrum L* on alloxan-induced diabetic rats.

Keywords: Chemical, Constituents, Cytotoxicity, Leaves, *Solanum Nigrum,* diabetics, Chromatography, Elucidation.

Article Information

Conferenc Proceedings: Online Congress on Diabetes & Endocrinology

Conferecne date: September 23-24, 2020

Inovineconferences.com

***Corresponding author:** Christopher Emeka Ahuchaogu, Hauwa. Email: umaruisaac@gmail.com

Citation: Umaru IJ (2020) Chemical Constituents, Cytotoxicity and Hyperglycemic effect of the Leaves of Solanum Nigrum L. J Clin Res Diabetes Med