ABSTRACT

Diabetic mellitus (DMs) is the rapidly growing metabolic hormonal disorder; even though the allopathic system of treatment produces higher curative rate, the un expectable and un evidensable adverse cum side effects are the predominating threats to the physicians. The hormonal disturbances might have been treated by modern medicines for emergency but in case of chronic hormonal imbalances can be effectively treated by traditional herbal ingredients. This enlightened me to ensure this study on Poly Herbal Preparation (PHP). This may helps to reduce the dose dumping of the preparation and reduce the treatment risk. In this study the selected drugs are Asystasia gangetica leaf extract (AGLE), Ficus racemosa leaf extract (FRLE) and Morus indica leaf extract (MILE). The combined PHP had shown an excellent antioxidant and anti-diabetic activities. The in vitro antioxidant activity of individual and poly herbal are reported better, the in vitro antioxidant activity, among this PHP showed remarkable IC 50. The individual toxicity study was conducted as per OECD 420, 423 guidelines when the PHP is introduced for toxicity study the challenging perform as per OECD 425 guideline. The PHP have produced better tolerable dose up to 2000 mg/dl among this the dose was considered as 200 mg/kg. The individual AGLE had showed excellent in-vitro anti oxidant potency so, it was considered for anti-oxidant activity than other herbals. Hence the dose was selected as in the ratio of 1:1.5:1.5 (i.e., 50mg/kg of AGLE: 75mg/kg of FRLE: 75mg/kg of MILE). The respectively grouped experimental albino Wister rats were administered with streptozotocin (60mg/kg) for diabetic induction (220-250 mg/dL was considered for experiment) 0.9% NaCl solution (10ml/kg) to normal rats and Glibenclamide (5mg/kg) to standard rats were administered. The results clearly show the significant reduction of increased blood glucose levels near to the normal and compare to the diabetic control and statistically significant. This study clearly indicates that the herbal
preparation had shown the best result as that of the allopathic system (Glibenclamide) of drug. The *in-vivo* anti oxidant like SOD, Catalase, glutathione reductase and glutathione peroxidase were regained and normalized as normal control and standard treatment. This result was statistically significant (*p* ≤ 0.0001-0.005). the lipid profile of the blood parameters like total protein, Total cholesterol, HDL-C, LDL-C, VLDL, Triglycerides were analyzed using auto analyzer which showed the significant regain of all the lipid profiles as that of the normal control with statistical significant.

**Key Words:** hormonal disorder, *Asystasia gangetica* (AGLE) ,*Ficus racemosa* leaf extract (FRLE), *Morus indica* leaf extract (MILE), blood glucose levels, *in-vitro* antioxidant activity, *in-vivo* anti oxidant.