

**INFLUENCE OF GLIMEPIRIDE AND *NERIUM OLEANDER*
EXTRACT ON INSULIN, GLUCOSE LEVELS AND SOME LIVER
ENZYMES ACTIVITIES IN STREPTOZOTOCIN-INDUCED
DIABETIC RATS**

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Abstract

The present study is aimed to assess the therapeutic potential of sulfonylurea drug glimepiride in comparison with *Nerium oleander* plant extract on insulin, glucose levels and some liver enzymes activities in streptozotocin-induced diabetic rats. Animals were divided into control and experimental groups. The experimental group was rendered diabetic by intraperitoneal injection of a single dose of 50 mg/kg body weight streptozotocin. Rats with serum glucose levels >200 mg/dl were subdivided into three sub-groups: rats of the first sub-group were remained without treatment and considered as diabetics. Animals of the second subgroup were orally administered 0.1 mg/kg body weight/day glimepiride all over the experimental period of 4 weeks. The third sub-group was orally received 250 mg/kg body weight/day *Nerium oleander* extract for 4 weeks. Streptozotocin-induced diabetic rats showed hypoinsulinemia and hyperglycemia compared to controls. Strong negative correlation ($r=-0.8$) was found between serum insulin and glucose levels in diabetic rats. This correlation was +0.4 and -0.3 in glimepiride and *Nerium oleander*-treated rats, respectively implying that glimepiride and plant extract improved insulin and glucose levels with the former was more efficient. The activities of serum aspartate aminotransferase, alanine aminotransferase and alkaline phosphatase were significantly increased in streptozotocin-induced diabetic rats compared to controls. Treatment of diabetic rats with glimepiride or *Nerium oleander* extract also improved liver enzymes activities.

Key Words: Diabetic rats, streptozotocin, glimepiride, *Nerium oleander*, therapy.