EVALUATION OF THE THERAPEUTIC POTENTIAL OF TAMARIND SEEDS (AQUEOUS EXTRACT) VERSUS ANTIDIABETIC DRUGS ON THE HISTOLOGICAL STRUCTURE OF LINGUAL PAPILLAE IN DIABETIC RATS

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Abstract

Diabetic patients suffer from several oral complications: thus there has been unending efforts in searching for treatment agents either in synthetic forms or from plant sources. The aim of the present study is to prove the efficacy of aqueous tamarind seeds extract in treatment of the complications that might occur in tongue papillae of high fat diet/streptozotocin (HFISTZ) type 2 diabetic rats relative to the conventional anti-diabetic drugs. Design: Thirty five adult male albino rats (200.220 gm) were selected for this study. The animals were randomly divided into five groups (seven rats each). Group I (Control -ve). Group II (Diabetic control): Type 2 diabetes was induced by 58% calories HF diet for 4 weeks followed by intraperitoneal administration of 517 (35 mg/ kg). Two weeks after STZ injection. diabetic rats were treated with oral doses of antidiabetic drugs as follows: Group III: Metformin (500mg/I ml distilled water/ kg/twice daily). Group IV: Forxiga (0.1 mg/I ml distilled water/ kg/day) and Group V: Aqueous tamarind seeds extract (80 mc0.5 ml distilled water/I00 g/day) for 4 weeks. Blood glucose level was measured every week. At the end of the experiment, tongue specimens were dissected and processed for light and environmental scanning electron microscopic examination. Results: Histological and ultrastructural examination of Group II (Diabetic group) revealed signs of deterioration and degeneration among the filiform and fungiform papillae. After 4 weeks treatment minor to moderate improvement in the architecture of the papillae has been reported in Groups Ill and IV respectively. In comparison to Groups III and IV. oral administration of tamarind seeds extract (Group V) caused significant improvement in the histological structure of the lingual papillae, covering epithelium, their taste buds and the associated gustatory pore. Conclusion: The findings of the present study indicate that aqueous extract of tamarind seeds possessed significant anti-diabetic and anti-inflammatory activity for improvement &diabetes associated oral complications that may prove its beneficial potentiality in treatment of type 2 diabetes

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