COMPARATIVE STUDY ON THE POSSIBLE EFFECT OF COD LIVER OIL VERSUS INSULIN ON PAROTID SALIVARY GLANDS OF STREPTOZOTOCIN-INDUCED DIABETIC ALBINO RATS

Prof. Amany Rabie

Abstract

Background: The diabetic condition is frequently associated with impaired functions of salivary glands. testified by both morphological deterioration of the gland and by altered salivary composition. Abnormal apoptosis has been implicated in salivary glands of diabetic rat models. Amyloidosis constitutes a group of diseases in which proteins deposit in tissues as insoluble fibrils, causing progressive organ dysfunction. Although insulin and oral hypoglycemic agents are the mainstays of diabetes treatment, they have prominent side effects and fail to alter the course of diabetic complications. Cod liver oil (CLO) is an important source of long-chain omega-3 (co-3) fatty acids as well as vitamins A. E and D. CLO has antioxidant effect especially on parotid salivary glands. Objective: The present study was undertaken to investigate the possible role of CLO versus insulin supplementation in enhancement of parotid salivary glands in streptozotocin (STZ)-induced diabetic rats.
Design: Sixty adult male Swiss albino rats (200-250 gm) were selected for this study. The ani-mals were randomly divided into four groups (fifteen rats each): Group I (Control group). Group II (Diabetic untreated group). Group DI (Insulin treated group) and Group IV (Cod liver oil treated group). At the end of the experimental period (four weeks). the rats were sacrificed and the parotid salivary glands were dissected out. The sections were examined histologically. immunohis-tochemically. histozoorpbometrically and by fluorescence staining technique.
Statistical analysis: Data obtained from histomorphomettic analysis were statistically described in terms of mean standard detnion (x SD).
Results: Histopathologic examination of Group I showed the normal histological features of parotid gland. Group II revealed apparent reduction in acinar size, ill-defined acinar and ductal cells outlines, nuclear changes. acinar and ductal cells degeneration, lipid droplets. dilatation of the duct system lumina and stagnated salivary secretion in the lumina of striated and excretory ducts. Moreover apparent decrease, hyalinization and degeneration in the fibrous connective tissue (Cl)

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