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"Langerhans cells in the gingival tissue of insulin dependent diabetic patients ,clinical , histochemical and ultrastructural study"

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Langerhans cells in the gingival tissue of insulin dependent diabetic patients.

Clinical,histochemical and ultrastructuralstudy

This study was carried out on 40 subjects divided into:

Group I: consisted of 20 insulin dependent diabetic patients their age ranged between 20-30 years, with periodontitis divided according to their blood glucose level to:

Group I A: consisted of 10 uncontrolled IDDM.

Group I B: consisted of 10 controlled IDDM.

GROUP II: consisted of 10 patients with adult periodontitis matched for age and sex as the diabetic group.

Group III: consisted of 10 subjects with clinically normal gingival for histochemical and ultrastructural comparison.

All the selected subjects were submitted to:

1-clinical medical examination.

2-clinical dental examination.

3- histochemical and ultrastructural study of the gingival tissue for identification of LCS.

From these studies the following results were found:

*No statistical significant difference was found in the plaque index when the diabetic group was compared with the periodontitis group also when compared with each other.

*A statistical significant increase in the gingival index, pocket depth and attachment loss was found in the uncontrolled IDDM when compared with the controlled group ,as evident histochemically an ultrastructurally where there is negative reaction for ATPase enzyme in the surface epithelium and the CT was infiltrated with many macrophages in the subepithelial layer. At the ultra structure level there is only precursors of Lcs which is due weak defence mechanisms of the diabetic patients.

*No statistical significant difference was found in all the indices when the controlled IDDMwas compared the periodontitis group, this result was confirmed by the histochemical and the ultrastructure study where there is increase in the number and activity of Lcs in the surface epithelium of the controlled diabetic group combined with macrophages in the CT

-The conclusions of the study were:

#Diabetes prevents langerhans cells from performing their function, and this may be responsible for the increase severity of periodontal destruction in those patients.

#Lsc in the gingival tissue of diabetic patients is affected by controlling the metabolic condition of the patients, hence there is immature form of the cells(precursors) in the uncontrolled diabetic group(increased periodontal destruction) ,where Lsc increase in number and activity in the controlled diabetic group(less periodontal destruction)

#Insult in activates to do it's proper function as evident by improved periodontal condition in the controlled IDDM group

#Lsc may be used as diagnostic and prognostic marker to study the periodontal condition in diabetics

#Further studies were needed to identify Lsc in the gingival tissue of non-insulin dependent diabetic patients.