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IMMUNOPATHOLOGY OF T-LYMPHOCYTE SUBSETS IN JUVENILE AND RAPIDLY RROGRESSIVE PERIODONTITIS

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The immunopathology of T_4 & T_8 cell subsets in gingival tissues from 20 patients affected with either juvenile (JP) or rapidly progressive periodentitis (RPP) were studied using immunoperoxidase method for monoclonal antibodies of T_4 & T_8. Results were compared with gingival samples taken from systemically and periodontally healthy subjects. T_4 subsets were found to be significantly elevated in JP & RPP, when compared with controls. Yet it was found to be higher in JP than in RPP, while T_8 subsets were found to be depressed in both types of diseases. Those findings could contribute to the immunopathogensis of JP & RPP.

INTRODUCTION :

T cells recognize processed antigenic peptides in association with class I or Class II molecules encoded by the major histocompatability complex (MHC) (Schwartz, 1985). Class I and class II MHC restricted T cells can be distinguished from each other by the presence of the surface markers CD8 and CD_4, respectively (Parnes, 1989).

CD4 was initially described as a phenotype marker for helper T lymphocytes (Reinherz et al, 1979). Similarly, CD8 expression was correlated with cytoxic T lymphocytes and suppressor cell function. However, Swain (1981) observed that expression of the CD4 and CD8 molecules was more closely correlated with MHC specificity of the T cells than with function, also others suggested that antigen specificity of T cells is mainly attributed to the T cell receptor (TCR) (Yanagi et al, 1984; Hedrick et al, 1984; T onogaga and Mack, 1987). These observations led to the hypothesis that CD4 and CD8 are receptors that interact with determinants on class II and class I MHC molecules, respectively and that these intractions modulate or augment the T cell response (Bierer et al, 1989) Whether a class II MHC. restricted T cell, and for CD_8 in concert with Class I, MHC. restricted T cell, occurs intrathymically or upon antigen stimulation in the periphery is not known.

CD_4 T cells (helper/inducer) lymphocytes are the most important cell subset in the immune system. It stimulates the effector cells by production of lymphokines which play an important role in activation and/or proliferation of B and T lymphocytes (Fung-Leung et al, 1991).

T4 also recognized antigens from a bank of memory cells (Bierer et al., 1989) and produce interleukine 2 (Taubeman et al, 1984 & Cole et al, 1986) and / or interleukin 3 (Suzuki et al, 1986).

CD8 T cells (suppressor / cytotoxic T8 lymphocytes) have a regulatory role for interferon production (Papermaster et al, 1983) which is necessary for immunoregulation (Demaeyer & Demaeyer Guigand 1982).

Control of antibody production (Johenson, 1980), regulation of antigen presentation (Steeg et al, 1982 & Nalsh et al, 1986), responding to antigenic challenge by lysis of target cells (Fung-Leung, 1991) and augmenta-

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