

Are Leptin Receptors present in the Gingiva?

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Citation

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Abstract

Leptin, a pleiotropic cytokine, regulates various metabolic and endocrine responses, has emerged as an important regulator of inflammation. Also, hyperleptinemia has been reported as a component of metabolic syndrome. Periodontitis and atherosclerosis have complex aetiologies, genetic and gender predispositions and may share pathogenic mechanisms as well as common risk factors. It is becoming increasingly clear that infections and chronic inflammatory conditions such as periodontitis may influence the atherosclerotic process. Recent reports indicate periodontal disease as a risk factor in systemic diseases including bacteremia, infective endocarditis, cardiovascular disease and atherosclerosis, diabetes mellitus and adverse pregnancy outcome. Leptin levels have been reported to increase due to endothelial dysfunction during inflammation. The leptin receptors are known to be expressed by adipocytes and in T-lymphocytes and vascular endothelial cells. Although adipose tissue is absent in gingiva, leptin receptors are present ubiquitous by in the body (eg. Thyroid gland, adrenal glands, lungs, placenta, kidney, liver, endothelial cells gastric mucosa. Recently, leptin has been identified in human saliva and leptin mRNA synthesis in salivary glands and mucosa has been demonstrated. Association between periodontitis, pregnancy and cardiovascular risk has been reported. We have shown

that gingival crevicular fluid(g.c.f.) leptin levels were significantly lowered in pregnancy periodontitis patients as compared to normal pregnant women (in press) . The higher leptin GCF levels in pregnant women without periodontitis may have a protective role in periodontal disease. Status of leptin receptor in g.c.f. is not known as yet and we postulate that leptin receptors may be present in gingival. There could be leptin receptor or expression in gingival tissue. Further studies regarding protective role of leptin in periodontal disease, pregnancy and future cardiovascular risk are required in this regard.

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