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Betaendorphin in Management of Oro-Facial Diseases

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Introduction- Endorphin is an endogenous opioid, neuropeptide, synthesize and stored in the pituitary gland in response to pain and stress. Out of three endorphins such as enkephalin, dynorphin, and betaendorphin. The betaendorphin is an abundant endorphin , binds with its μ receptors present on the nervous system and immune cells. Precursor of betaendorphin is pomc (Proopiomelanocortin) produce in the anterior pituitary gland. POMC is a large protein produced in response to CRH, cleave to form betaendorphin, MSH, and ACTH.

Betaendorphin binds with its μ receptors situated on the PNS results in inhibition of substance P,a neurotransmitter of pain and inflammation. Betaendorphin binds with its μ receptors on the CNS, results in inhibition of GABA, inhibitory neurotransmitter, release of dopamine ,excitatory neurotransmitter involved in addiction, analgesic activity, self reward, stress reduction, cognitive development.

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Betaendorphin in Management of Oro-Facial Diseases

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I. Introduction

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Betaendorphin binds with it's μ receptors on the innate and adaptive immune cells such as neutrophils, macrophages, dendritic cells, NK cells, T cells and B cells involved in inhibition of inflammatory mediators and release of opsonin, granzymeB, IFN-Υ, antibodies ,IL-2,IL-12,IL-10 involved in anti-inflammatory activity, antibacterial and antiviral activity, apoptotic activity, antitumor activity,. Beta-endorphin inhibit the chronic psychological stress mediated ACTH induced hormonal imbalance such as thyroid, parathyroid, and other hormonal imbalance.

Beta-endorphin inhibits release of chronic psychological stress induced release of cortisol, adrenaline, noradrenalin; mediated vasoconstriction leads to headache, Blood pressure, myospasm, myofacial pain.

Betaendorphins can be used in holistic management of various oro-facial diseases such as psychosomatic diseases, Temporomandibular pain, lichen planus, autoimmune diseases, oro-facial pain, burning mouth syndrome, oral cancer, bacterial, viral, and fungal infections because of it's analgesic, anti-inflammatory, stress reduction, muscle relaxant, immune stimulatory, and antimicrobial activity, without adverse effects and inexpensive. Thorough understanding of endorphins, mechanisms of actions, helpful for effective holistic management of oro-facial diseases.

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