The 1st International Neuroinflammation Congress and 1st Student Festival of Neurosience

Shefa Neuroscience Research Center, Tehran, Iran, 11-13 April, 2017

The Neuroscience Journal of Shefaye Khatam

Volume 5, No. 2, Suppl 2

Poster Presentation

The Role of CGRP in Dental Pulp Nerve repair

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Published: ***11 April, 2017***

Abstract

Tooth pulpal nerves include sympathetic and sensory nerves that originate from trigeminal ganglion .From the terminal of these sensory nerves neuropeptides are secreted that are neuromodulators and neurotransmitters. One of them is CGRP (Calcitonin gene-related protein) which has a vasodilatory effect on pulpal vessels. Near abscess and moderate injuries, this neuropeptide can lead to neural fibers sprouting using its receptors (The Calcitonin receptor _ like receptor and receptor activity-modifying protection), thus, its modulating effect can lead to pulpal healing. For treating this inflammation, several common anti-inflammatory drugs such as steroid drugs (also named corticosteroids or Cortone) can be used. One of the side effects of these drugs is osteoporosis. But non-steroidal anti-inflammatory drugs do not have this adverse effect and can inhibit the effect of both kinds of cyclooxygenase enzyme leading to the inhibition of prostaglandins synthesis and thus inhibiting the inflammation .But these drugs can cause digestive problems including peptic ulcerative .This is because of the inhibition of type 1 cyclooxygenase. There is a group of these drugs named "Celecoxibs" which only inhibits the effect of the second type of cyclooxygenase and does not have adverse effects on stomach and coagulation characteristic of blood. Considering all these, if we synthesis a substance with anti-inflammatory characteristics of substances such as non-steroidal anti-inflammatory drugs and antipyretic and anti-pain characteristics similar to GCRP, we can expect that it induces these effects on pulpal nerves and leads to tissue healing and Axonal sprouting in an inflamed and exposed pulp by attaching to this neuropeptides receptors and inducing it and in this way to some great extents, we can overcome to tooth nerves inflammation and the process of pain generation followed by caries or different pulpal or dentin related injuries like endodontics treatment.

Keywords: Pulp, Inflammation, CGRP, Nerve repair

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