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The analgesic effect of electroacupuncture on inflammatory pain

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Electroacupuncture (EA), an alternative, more potent form of traditional acupuncture combined with modern electrotherapy is currently under investigation regarding its potential analgesic effects on inflammatory pain. The endocannabinoid system is involved in various physiological processes including nociception (pain-sensation). It is comprised of cannabinoid receptors type-1 (CB1) and type-2 (CB2) and their endogenous lipid-based ligands (endocannabinoids). EA has been shown to significantly increase CB2 receptor expression on keratinocytes and infiltrating inflammatory cells (macrophages and T-lymphocytes), as well as reduce the expression of proinflammatory cytokines in inflamed skin tissues. This mechanism of action may mediate the analgesic effect of EA on inflammatory pain. EA can also produce analgesia by increasing b-endorphin and endocannabinoids (eg. anandamide) levels and by activating peripheral μ-opioid receptors in keratinocytes and infiltrating immune cells in inflamed skin tissues. Finally, EA treatment significantly decreases the mRNA and protein levels of proinflammatory cytokines IL-1b, IL-6 and TNF-a in inflamed skin tissues, thus reducing inflammatory pain through activation of CB2 receptors. Therefore, electroacupuncture can exert its analgesic effects through numerous mechanisms and can be beneficial in the treatment of inflammatory pain.

Biography

Zogopoulos Panagiotis is a resident of Neurosurgery at the General Hospital of Nikaia-Piraeus "Agios Panteleimon", Athens, Greece. He has received a 6-month advanced clinical training (clinical fellow) at the Neurosurgery Department of Osaka University Hospital in Japan. Several of his papers have been published in reputed peer-review journals and he has presented various researches in international conferences.

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