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Acupuncture

Dalamagka Maria**Anesthesiology department, General Hospital of Larissa, Greece*

***Corresponding author:** Dalamagka Maria, Anesthesiology department, General Hospital of Larissa, Greece.

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Acupuncture involves the activation of specific points of the skin, usually by inserting needles. Acupuncture was based on the principles of Chinese traditional medicine. Traditional acupuncturists perceived health in terms of a violent force or energy, called Qi, which circulates between organs along channels that are called meridians. The flow of energy "Qi" must have the right strength and quality in each of these meridians and organs, so as to maintain health. Acupuncture points are located along the meridians and can alter the flow of energy and appear to correspond to the terminal nerve endings. There is a distinct difference between traditional and western acupuncture, but the two approaches overlap significantly. Also, traditional acupuncture is not a treatment recorded sometime in history, but there are significant deviations between different acupuncture schools. Two acupuncturists may choose different points, depth of needle penetration and different needle residence times. As far as Western theories are concerned, acupuncture induces signals in central nerves that alter the transmission through the spinal cord, as well as the perception of pain in the brain. In 1987 Pomeranz suggested the theory that acupuncture stimulation stimulates muscle fibers A- δ and C, which leads to the transmission of signals to the spinal cord and this in turn leads to local release of dynorphin and enkephalin. These local processes are transmitted via centrifugal pathways to the midbrain, where they activate a series of stimulatory and inhibitory spinal cord transporters. The final release of neurotransmitters, such as serotonin, dopamine and norepinephrine in the spinal cord, leads to pre- and postsynaptic inhibition and inhibition of pain transmission. When these signals reach the hypothalamus and the pituitary, they induce the release of the coronary artery and endorphins. Pomeranz's theory was confirmed by numerous experiments in his research laboratory, but also by other researchers. This fundamental principle for acupuncture-induced analgesia has been explored over the last three decades and with a series of neurophysiological and imaging studies [1].

Meridians are called the energy streets (King). The meridians are the conceivable lines on the body that link specific points of acupuncture. There are 12 meridians in which energy circulates at a certain rate incessantly. During two hours in each meridian there is a state of maximum power supply. The 12 meridians are arranged in pairs, which means they are exactly symmetrical right and left in relation to the midline of the body. Every meridian is responsible for an organ or a group of functions. These 12 meridians are then divided into 6 Yang and 6 Yin meridians, without this meaning that each class has only Yang or possibly only Yin energy circulating. This name is related to the function of the particular organ for which they are responsible. Thus it is possible to discern Yang and Yin. This is a condition that has Yang over-function or lack of Yin or Yang or Yin. These roads, the basic lines where energy circulates, should be stressed that they have nothing to do with blood circulation [1].

It has been shown that the transmission of information between two neurons is electrochemical and may be affected by acupuncture due to the metallic construction of the needles. The chemical transmission of the stimulus simultaneously controls and influences the transmission of different information on the same neuron. In the central nervous system, chemical transmitters, such as norepinephrine, dopamine and acetylcholine, act as stimulants, while others such as serotonin act inhibitory. The ligands in the final axes are assembled from various regions and stimulatory or inhibitory neurotransmitters can be released which have corresponding agonistic or antagonistic effects in the same postsynaptic neuron. Acupuncture may affect neurons, facilitating the transmission of the stimulus through synapses [2].

In 1997, the US National Institute of Health accepted the fact that there is sufficient evidence of acupuncture to extend its use to conventional medicine. Acupuncture has been used as a health care mode for over 3000 years. Acupuncture medical practitioners have shown clinical success in a variety of health problems. Acupuncture today is widely accepted at the clinical level. Most people have

linked acupuncture to pain control. However, acupuncture has a proven track record in treating endocrine, circulatory and systemic conditions. Acupuncture and modern medicine have the potential to support and strengthen the health and wellbeing of patients. What is known about the effects of acupuncture? Over the last few decades the research has tried to explain how acupuncture works and has a clue [2].

In 1997, the National Institute of Health (NIH) reported that: "Studies have shown that acupuncture can cause biological reactions by mediating mainly sensory neurons in many structures of the central nervous system. This can lead to activation of pathways that act in a variety of normal systems in the brain as well as in the periphery. "The NIH also suggests that acupuncture can activate the hypothalamus and the pituitary gland and lead to a wide range of systemic effects. Variations in neurotransmitter secretion and hormone secretion and changes in blood flow regulation have been documented. There is also sufficient evidence for the observed changes in immune function, induced by acupuncture. The following theories on the acupuncture mechanism are presented:

A) Neurotransmitter Theory: Acupuncture works in higher regions of the brain by activating the secretion of β -endorphins and enkephalins in the brain and spinal cord. The release of neurotransmitters affects the immune system and the "anti-nociceptive" mechanisms to stop the pain.

B) The Autonomic Nervous System Theory: acupuncture stimulates the release of norepinephrine, acetylcholine and various types of opioids, leading to autonomic nervous system balancing and pain reduction.

C) Gate Control Theory: Acupuncture activates "anti-nociceptive receptors" that prevent the transmission of nonsense signals to the dorsal horn and thus exclude harmful stimuli.

D) Vascular-Interstitial Theory: acupuncture manages the body's electrical energy by creating a closed loop transfer system in the tissues. This process facilitates healing by allowing the transfer of electrical energy between normal and injured tissues.

E) Blood Chemistry Theory: Acupuncture affects blood concentrations of triglycerides, cholesterol and phospholipids, leading to the conclusion that acupuncture may increase or decrease peripheral blood components, so that to regulate the homeostasis of the body [3].

According to a study published in the Archives of Internal Medicine, 51% of physicians perceive the effectiveness of acupuncture, and most clinicians refer their patients to acupuncture, more than any other alternative care provider Astin [4].

NIH notes that clinical experience based on research data justifies the use of acupuncture in a range of clinical conditions. Positive clinical trials have also been with regard to addiction, post-stroke recovery, carpal tunnel syndrome, osteoarthritis and headache. It is also reported that acupuncture therapy may be useful in other conditions such as asthma, postoperative pain, back pain. Indeed, acupuncture has been used to treat many painful conditions, such as back pain, chronic shoulder and neck pain, knee

osteoarthritis, migraine, dysmenorrhea, and acute postoperative pain. Sun and co [5] conducted a systematic review to assess the effectiveness of acupuncture and related techniques in treating post-operative pain. They concluded that pre-operative acupuncture can be a useful, additional tool in treating post-operative pain. It is noted that under the umbrella of acupuncture there are often a number of disparate techniques and that the relevant studies are not always methodologically perfect. As a result, although the results are encouraging, their generalization should be subject to caution.

Regarding the physiological mechanisms at the biochemical and genomic level it has been found that acupuncture (traditional and electro cephalous) activates the hypothalamus and brain nuclei, as well as the primary aesthetic cortex, while deactivating part of the cortex of the adipose helix. At the gene level this translates into activation of genes producing endorphins. One of the benefits of acupuncture is that the likelihood of side effects is considerably lower than that of many drugs and medical methods used for the same conditions. For example, musculoskeletal conditions such as fibromyalgia, epicondylitis, tennis elbow, and miscarriage of muscular fascia are conditions in which acupuncture may be useful. These painful conditions are often treated with anti-inflammatory drugs (aspirin, ibuprofen) or injections of steroids. Both medical methods have the potential for adverse side effects but are widely used as acceptable treatments. The evidence supporting these treatments is not better than those mentioned in acupuncture. In summary, acupuncture therapy is therefore directly related to somatosensory nerves and the autonomic nervous system. The placement of a needle at a strictly selected site and in a particular area inhibits the transmission of stimuli to the somatosensory nerves. Acupuncture works by closing the pain portal and thus blocking the transmission of stimuli to the central nervous system. At the same time it leads to secretion of endogenous opioids (endorphins), which also interprets the analgesic effect of acupuncture on surgery. Acupuncture works as an effective alternative and complementary treatment method. It is a safe, effective and natural approach that helps to regain and maintain health and mental well-being [6,7].

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