

Review of basic studies of analgesic action of acupuncture and moxibustion focused on the Japanese researches

Kaoru Okada, Kenji Kawakita

Department of Physiology, Meiji University of Oriental Medicine

The mechanism of acupuncture analgesia, based on modern medical methodology, is one of the most widely researched topics in complementary and alternative medicine (CAM). Endogenous opioid-mediated mechanisms of acupuncture have been well established since the 1970's. We intend to introduce the progress of research in acupuncture analgesia by Japanese investigators. The major topics are the physiological basis of analgesic effects induced by acupuncture and moxibustion, including the actions of afferent fibers, and endogenous opioid and diffuse noxious inhibitory controls (DNIC).

In the early stages of acupuncture research in Japan, neural mechanisms were studied by many neuro-physiologists. They explored the various neural connections in the central nervous system, including the ascending and descending pathways, and demonstrated that low frequency electro-acupuncture stimulation was involved in the production of endogenous opioids. Subsequently, recent studies have reported that the endogenous opioids act in the peripheral tissues via the immune system in pathological conditions. These opioid mediated analgesic actions have features that take time to develop and have long lasting effects. DNIC also has an analgesic action, and is considered another pain inhibitory mechanism of acupuncture. Nociceptive discharges and/or reflexes were rapidly suppressed by acupuncture and moxibustion. Opioid and/or non-opioid mediated analgesic mechanisms may depend on the frequency of the afferent discharges activated by acupuncture and moxibustion stimulations.

Keywords: endogenous opioids, diffuse noxious inhibitory control (DNIC), afferent fibers