Scientific support for electrodiagnosis

Relationship to homœopathy and acupuncture

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Abstract

The use of acupuncture, homœopathy and electrodermal instruments is increasing among physicians. Federal and state regulatory agencies have recently stepped up their investigations into the use of electrodiagnostic devices. A review of the history of medicine, the advent of electrodiagnosis and how it relates to acupuncture and homœopathy, past and present research, scientific support and future possibilities is presented. Scientific concepts of holism and nonlinear physics provide a new medical paradigm, quantum morphodynamics.

Electroacupuncture: Mechanisms and Clinical Application

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Acupuncture is an ancient Chinese method to treat diseases and relieve pain. We have conducted a series of studies to examine the mechanisms of this ancient method for pain relief. This article reviews some of our major findings. Our studies showed that acupuncture produces analgesic effect and that electroacupuncture (EA) is more effective than manual acupuncture. Furthermore, electrical stimulation via skin patch electrodes is as effective as EA. The induction and recovering profiles of acupuncture analgesia suggest the involvement of humoral factors. This notion was supported by cross-perfusion experiments in which acupuncture-induced analgesic effect was transferred from the donor rabbit to the recipient rabbit when the cerebrospinal fluid (CSF) was transferred. The prevention of EA-induced analgesia by naltroxone and by antiserum against endorphins suggests that endorphins are involved. More recent work demonstrated the release of endorphins into CSF following EA. In addition, low frequency (2 Hz) and high frequency (100 Hz) of EA selectively induces the release of enkephalins and dynorphins in both experimental animals and humans. Clinical studies suggesting its effectiveness for the treatment of various types of pain, depression, anxiety, spinally induced muscle spasm, stroke, gastrointestinal disorders, and drug addiction were also discussed. Biol Psychiatry 1998;44:129–138 © 1998 Society of Biological Psychiatry

Key Words: Acupuncture analgesia, drug addiction, endorphins, nociception, opioids, pain, neuroelectric stimulation

Introduction–Historical

Traditional Chinese Acupuncture is a 3000-year-old folk therapy. It is based upon metaphysical concepts of “ch’i” (Qi), a supposed body energy that runs through hypothesized channels called “meridians.” On
these “meridians” are 365 designated acupuncture points that can be used for stimulation via needles or “moxibustion” (lighted punks of artemis vulgaris) to balance “yin and yang” by relieving blockages in the flow of “ch'i.” Diagnosis is made by feeling for 12 organ-specific pulses located on the wrists and with cosmological interpretations including a representation of five elements: wood, water, metal, earth, and fire.

One of us (GAU) learned traditional Chinese acupuncture 30 years ago. It was found useful in treating patients with chronic pain, but the metaphysical explanations and the necessity for mystical rituals were troublesome. A few years later, in 1971, President Nixon visited China, and acupuncture became a household word in the United States. The American Medical Association was also troubled by metaphysical explanations and declared (St. Louis Post Dispatch, August 4, 1974) that acupuncture was “quackery.” This discouraged U.S. medical schools from interest in this type of therapy. Some even called it “Oriental hypnosis.”

Our laboratory in St. Louis, Missouri was then studying neurophysiological concomitants of hypnosis and received a grant from NIH to compare these two treatments (Parwatikar et al 1979; Ulett et al 1979). We were able to report that acupuncture was not hypnosis (Ulett 1983). We studied the physiological properties of acupuncture points (Brown et al 1974), and concluded with Liu (Liu et al 1975) and Gunn (1978) that useful acupuncture points were mostly motor points or areas near major nerve pathways. We published our Atlas supporting the clinical use of not 365 but rather 80 points (Ulett 1982). Studying experimental pain in human volunteers we found that although needles alone gave some pain relief, when electricity was added the modulation was 100% more effective (Saletu et al 1975). This was in keeping with our observation that Chinese surgeons added electricity to their needles when they wanted strong analgesia for surgical procedures.

Increasingly research publications (Pomeranz and Stux 1979) gave strong evidence that acupuncture could be explained on a physiological rather than metaphysical basis. In 1987 Professor Ji-sheng Han published a collection of research studies on acupuncture from his laboratory in Beijing Medical University covering a 25-year period From the University of Missouri–Columbia, School of Medicine, St. Louis, Missouri (GAU); St. Louis University, School of Medicine, St. Louis, Missouri (SH); and Beijing Medical University, Beijing, China (JH).

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PII S0006-3223(97)00394-6 (Han 1987). In 1990 Han demonstrated the differential release of brain neuropeptides by different frequencies of stimulation (Han and Sun 1990). He also showed that conducting polymer pads were equally as effective as needles (Wang et al 1992). Thus it was finally possible to propose a simple clinical method of acupuncture treatment, the principle of which could be
taught in a single afternoon (Ulett 1992), without the requirement for hundreds of hours of lectures on Chinese metaphysics as currently mandated in 33 states. This article reviews some of Dr. Ji-sheng Han’s work on the physiological mechanism of electroacupuncture-induced analgesia in the past 25 years.

Summary of Research from the Laboratory of Professor Ji-sheng Han, Beijing Medical University, Beijing, China, Establishing the Neurochemical Basis of Acupuncture Analgesia

Volunteers with a Long Latency and Half-Life

The first paper demonstrating the analgesic effect of acupuncture using experimentally induced pain and quantitative methods to determine acupuncture-induced changes in pain threshold in medical student volunteers at Beijing Medical University article was published in 1973

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