

Acupuncture: A Form of Eastern Medicine Needling Its Way into the Western World

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Abstract

With the increasing popularity of complementary and alternative medicine, the need for physicians to be informed about these different treatment modalities has become essential. One such modality is acupuncture. The ancient Chinese have used acupuncture for the treatment of a wide range of medical conditions. Recently in North America, it has been used to alleviate pain, nausea, arthritis, and digestive disorders. A review of the literature suggests that although safe, acupuncture's therapeutic value is questionable in many of the conditions that it is being used to treat. However, acupuncture has been shown to be clinically effective in the treatment of adult postoperative and chemotherapy-induced nausea and vomiting. Thus, for acupuncture to become widely accepted in Western medicine, more high quality studies demonstrating its effectiveness are required.

As Canadians become more accepting of complementary and alternative medicine (CAM), physicians should become informed about these therapies to answer their patients' questions. In the previous issue of the *UTMJ*, Hirji and Zakrzewski examined the four most popular CAMs: chiropractic, naturopathy, acupuncture and homeopathy.¹ The purpose of this article is to explore acupuncture in greater depth.

Historical Background

Acupuncture has been a part of traditional Chinese medicine for over 6000 years. Through the insertion of fine needles into specific points of the body, acupuncture is believed to prevent and treat a wide variety of health problems. The exact origin of this ancient form of medicine is uncertain. Some historians have suggested that acupuncture originated when it was observed that soldiers who were wounded by arrows were able to recover from chronic illnesses. Thus, experiments determining the effects of piercing the body with sharpened objects were pursued. Originally, the ancient

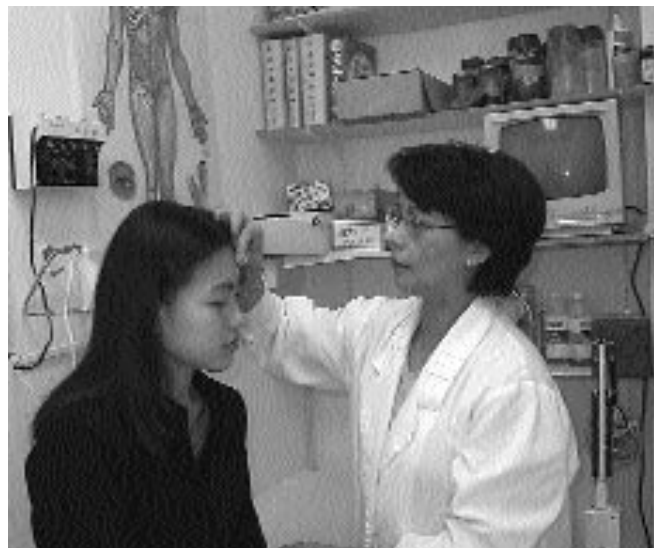


Figure 1. An acupuncturist performs an acupuncture treatment on a patient in a Chinese medicine clinic. Photograph by Wendy Hui.

Chinese used needles made of sharpened stone fragments, bone, and bamboo. As metals were discovered, needles made of iron and silver were utilized.² Currently, stainless steel needles are most often employed in acupuncture.

Traditional View

A central concept behind traditional acupuncture is that of two opposing energy forces: "yin" and "yang". Yin is associated with a passive, calming effect, while yang is associated with a more stimulatory, excitatory effect.³ These two forces form the basis of "Qi" or life-force, which flows within the body. It is believed that Qi circulates throughout the body in special channels called meridians. The meridians are bilateral and run just beneath the skin surface. There are 12 main meridians linking the organs and substance of the body together.⁴ If there is an imbalance between yin and yang, health problems may result. Imbalances will manifest themselves at specific points, which will be tender, and this allows a diagnosis to be made. To alter this imbalance, fine needles

are inserted into the skin at specific sites called acupuncture points (acupoints). The needles are manually inserted and are left on the skin from a few seconds to several minutes. These acupoints are located along the meridian lines and it is believed that the stimulation of these points can alter the flow of Qi. Consequently, health can be restored. There are approximately 2000 specific acupoints; however, most acupuncturists use only 150.³

There are other therapies similar to acupuncture that try to restore imbalances of Qi as well. Electroacupuncture involves the passing of electric current through a conducting needle into acupoints. Heat through the combustion of the herb moxa is used to stimulate the acupoints in moxibustion. In acupressure, manual pressure is used to stimulate the acupoints. Lastly, laser-generated light has also been used to stimulate the acupoints. These other therapies work on the same concept of trying to correct imbalances of Qi by stimulating the acupoints.²

Conventional Explanation

Most Western practitioners of acupuncture have discarded many of the concepts of traditional acupuncture. To these practitioners, there has not been any satisfactory histological or anatomical evidence for the existence of meridians. As a result, they attempt to explain the effects of acupuncture from an anatomical and physiological basis. For example, acupuncture has been shown to stimulate the release of endogenous opioids and serotonin. These neurotransmitters are thought to inhibit certain parts of the pain pathway and thus alleviate pain.⁵ Also, acupuncture has been shown to stimulate the A- δ fibres of the pain pathway. These fibres enter the dorsal horn of the spinal cord and can mediate segmental inhibition of pain impulses carried by the C fibres. As well, the A- δ fibres can enhance the descending inhibition of C fibre pain impulses at other segmental levels.⁴ This helps explain in conventional physiological terms why acupoint stimulation in one part of the body can alleviate pain in another part of the body.

Evaluation of Acupuncture as a Treatment Modality

In Europe and North America, acupuncture is used primarily to treat chronic diseases and pain due to its apparent ability to stimulate the release of neurotransmitters that act on pain pathways. It is also being increasingly applied towards the treatment of a wide variety of complaints, ranging from arthritis, headache, asthma and digestive disorders, to the treatment of alcohol, smoking and drug addiction.¹ However, the question remains as to whether these acupuncture treatments provide any therapeutic benefit to the patient by successfully treating their medical complaints. Thus, for acupuncture to be considered a plausible treatment modality, as for any other accepted treatment regimen, clinical evidence of both safety and efficacy is required.

Safety Issues

The overall consensus is that acupuncture is considered safe when practised by professionals appropriately. Ernst and White reviewed a series of surveys that were conducted to assess the safety of acupuncture.⁶ The incidence of minor adverse events from treatment, such as needle pain (1% to 45%), fatigue (2% to 41%), dizziness (0.2% to 38%), and bleeding (0.03% to 38%), were quite common. The observed variations may be due to differences in the definitions of these adverse events, in the acupuncture techniques utilized, and in the anatomical areas treated. However, the occurrence of serious adverse consequences of acupuncture are rare, with no reported incidents of infection or life threatening complications, and only two reports of pneumothorax, in nearly a quarter of a million treatments.⁶

Issues of Efficacy

The issue of efficacy is more difficult to assess. Mayer suggests the classification of acupuncture treatment outcome trials on the basis of examining the "strong hypothesis of acupuncture" and the "weak hypothesis of acupuncture".⁷ Testing of the strong hypothesis assesses whether acupuncture at particular sites along the classical meridians will be more effective for treating a certain condition than performing the same manipulation at a site not on the meridian. Support for the strong hypothesis suggests traditional acupuncture, and not merely indiscriminate body piercing, has therapeutic value. Experimental designs that compare acupuncture to a standard biomedical treatment, or to various placebo or sham manipulations, test the weak hypothesis of acupuncture. The weak hypothesis is that acupuncture at the theoretically correct points is more effective than placebo manipulation such as tapping a blunt needle at the same point. Thus, this hypothesis is given the 'weak' designation since it does not directly assess the therapeutic basis of traditional acupuncture. Mayer reviewed clinical trials conducted in those areas of clinical acupuncture research that the United States National Institutes of Health, Office of Alternative Medicine, deemed to have scientific evidence showing the effectiveness of acupuncture treatment or potential usefulness.⁸ For all the conditions acupuncture is used to treat, it was only found to be clinically effective for the treatment of adult postoperative and chemotherapy-induced nausea and vomiting.

Acupuncture Trials

Studies of acupuncture's effects on nausea and vomiting provided support for both the strong and weak hypotheses of acupuncture.^{7,9} The experiments compared standard antiemetic treatment with acupuncture at the traditionally relevant Pericardium 6 (P6) acupoint and a nearby traditionally inactive point. The acupuncture treatment at P6 effectively treated the nausea while the same procedure at the inactive point was no more effective than if no treatment was provided. Other studies examining the effect of P6 acupuncture on chemotherapy induced nausea and vomiting were reviewed by Parlitt,

who also concluded that P6 stimulation can provide a statistically reliable and clinically significant reduction in these conditions.¹⁰

Many studies have examined the effectiveness of acupuncture for the treatment of various types of pain including headache, menstrual cramps, tennis elbow, fibromyalgia, osteoarthritis, lower back pain, postoperative dental pain, and carpal tunnel syndrome.⁷ A review of the available data on the treatment of these various pain syndromes failed to provide strong, convincing evidence for the efficacy of acupuncture and its use in place of current, conventional treatments. For example, Birch reviewed studies examining the effect of acupuncture on headache.¹¹ In the five studies using biomedical treatment or no treatment controls, all five studies found acupuncture about equal in efficacy to the control treatment. In nine studies using sham or placebo controls, eight of the studies found acupuncture treatment more effective than the control treatment, but the effect was statistically significant in only three of the studies.

Similarly, clinical trials examining the use of acupuncture for the treatment of other conditions failed to provide convincing evidence for its efficacy. In reviewing investigations related to the use of acupuncture for treating asthma, Kleijnen et al concluded that "claims that acupuncture is effective in the treatment of asthma are not based on the results of well performed clinical trials".¹² The use of acupuncture for the treatment of various addictions was thought to be effective based upon acupuncture's biological association with the modulation of the endogenous opioid systems.¹³ However, a review of 22 controlled clinical studies assessing the effects of acupuncture on cigarette smoking, heroin and alcohol addiction, found that any claims concerning acupuncture's efficacy as a therapy for treating these addictions were not based on sound clinical research.¹⁴

Overall, with the exception of treatment for postoperative and chemotherapy-induced nausea and vomiting, there is no clinical support for the strong hypothesis of acupuncture. Even though some evidence supporting the weak hypothesis of acupuncture is present for the treatment of headache and lower back pain, the conclusions are far from definitive. Thus, before acupuncture is accepted as a viable treatment modality in Western medicine, convincing evidence of efficacy must be demonstrated from truly double-blind, sham controlled trials using adequate acupuncture treatment with appropriate sample sizes to permit the formation of both positive and negative conclusions.

Final Thoughts

Acupuncture will continue to form one of the foundations of traditional Chinese medicine. In the West, there has been a growing demand for acupuncture treatment and some have claimed that acupuncture can treat a wide array of health

problems. Though safe, efficacy has not been fully proven for many conditions that some people are using acupuncture for. It is clear from studies of the treatment of adult postoperative and chemotherapy-induced nausea and vomiting that acupuncture does work and its effects are more than simply a placebo effect. However, it is also clear that acupuncture is not a panacea that some claim it to be. It is likely that acupuncture can be used to treat other health problems but more high quality studies need to be performed to assess these claims.

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