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Supplemental Appendix. Acupuncture Practice Styles, Diagnostic Techniques, Types of Needling, and Adjunctive Treatments

Styles of Practice of Acupuncture

Although acupuncture originated as a traditional practice in ancient China, numerous styles have evolved since then in East Asia, and in the last 400 years, in the West. *Traditional Chinese medicine* (TCM), which traces its roots to ancient China, has undergone substantial change over the centuries, most recently in the 20th century. Currently, the system includes a variety of traditional diagnostic approaches, as well as numerous therapeutic modalities, including herbal medicine, acupuncture, moxibustion, cupping, and Tui Na (Chinese massage). TCM acupuncture often involves heavy manipulation of the acupuncture needles and a strong *de qi* sensation.¹ By contrast, the various styles of *Japanese acupuncture* (which all trace their roots to different interpretations of an ancient Chinese acupuncture text) involve more abdominal and meridian palpation and are characteristically more subtle than TCM, with shallower needle insertion and no emphasis on eliciting the *de qi* sensation. These styles also seem to concentrate much more on putative root causes of a condition rather than symptom reduction per se.¹ *French energetic acupuncture*, which is the basis of a physician training course at UCLA developed by Joseph Helms, blends a Western medical history with some traditional East Asian practices, such as palpation of the radial pulse and the acupuncture meridians (ie, the invisible channels that carry *qi* or “energy” throughout the body). *Trigger point acupuncture* focuses on the treatment of trigger points by acupuncture needling. *Worlsey 5 element acupuncture* was developed in England specifically to focus on the concerns of Western patients, especially their psychological concerns. It includes a blend of Chinese, Korean, and Japanese acupuncture that is coupled with British naturopathic theory.

Diagnostic Techniques of Acupuncture

Traditionally, a variety of diagnostic techniques are used to assess the patient, and information from multiple techniques is combined to determine the patient’s Chinese medical diagnosis or “pattern of disharmony.” Traditional questioning, often called *asking diagnosis*, elicits information about sensations of hot or cold, quality and location of pain, medical history, perspiration, headaches and dizziness, urination and stools, thirst, appetite, sleep, and for women, characteristics of the menses. This questioning is often supplemented with general observation of the patient (*visual diagnosis*), which includes the patient’s physical shape, facial color, and behavior during the visit), inspection of the tongue or *tongue diagnosis* (determination of its general shape, color and the color of the coating), and taking the radial pulse or *pulse diagnosis*. Pulse diagnosis involves feeling the pulse on the wrist at superficial and deep levels at 3 locations that correspond to different Chinese medicine organ systems. Other common procedures include *palpation of acupuncture points and acupuncture channels*, palpation of the abdomen (*abdominal diagnosis*), listening to the quality of the voice (*auditory diagnosis*), and determination of specific body odors that can be diagnostic (*olfactory diagnosis*).

Types of Needling

Regular body acupuncture involves using acupuncture points located on the 14 traditional acupuncture channels (ie, meridians) that traverse the body, as well as on classically described “extra” points. *De qi* is the characteristic dull, heavy, tingling, or warmth that patients may feel after the needle is inserted and stimulated. These sensations are thought to be elicited when needling activates type II, III and IV afferent nerve fibers in the muscle.² *Microsystems* of acupuncture needle only locations on a particular part of the body (ie, ears, hand, scalp) but can treat problems originating in other parts of the body. Whereas many styles of acupuncture involve inserting needles 1.3 to 3.8 cm or more, depending on the anatomic location, *shallow needling* involves inserting needles less than 0.5 cm. In some cases 2 shallowly inserted needles can be connected by cords called *ion pumping cords*. Use of these cords purportedly facilitates the flow of micro amounts of electrical current between the 2 needles in the absence of external electrical current. *Intradermal* needles are extremely small and superficially inserted; they are retained for up to 1 week and apply continuous but subtle stimulation to the location where they are inserted. They are typically inserted at the end of a treatment to prolong the effect. In *plum blossom needling*, a plum blossom hammer containing 5 short needles is used to tap the surface of the skin in a particular region of the body. No needle insertion occurs during this technique.

Adjunctive Treatments Used by Acupuncturists (Including Information on Herbal Safety)

Acupuncturists use several methods for applying heat near or on the surface of the body. Traditionally, they use *moxibustion*, or burning of the mugwort plant *Artemisia vulgaris*, near or on the surface of the body at specific locations. More recently, some acupuncturists have used infrared lamps instead of moxibustion. *Cupping* is the application of suction cups to the skin to induce a vacuum. Cupping is thought to clear local “stagnation” (common in pain conditions) by stimulating the flow of “qi and blood.”¹ *Gua sha* is stimulation of the skin by rubbing a ceramic tool over part of the body. *Acupoint bloodletting* is a type of bloodletting in which acupoints are punctured with needles or a small lancet to remove a small quantity of blood. *Oriental massage techniques*, which focus on treating imbalances in the body's energy, or chi, include acupressure, Amma, and Tuina. Shiatsu (finger pressure), an adaptation of acupressure, is the major form of Japanese massage.

Chinese herbs are available in a variety of forms, including raw herbs (that can be combined and boiled to make a tea) and as pills, powders, and tinctures. They are typically combined into a prescription that contains from 3 to 15 herbs.³ The rationale for combining these herbs is to minimize risks of side effects and to maximize therapeutic benefit. Herbs, as do Western drugs, can pose a number of risks to patients. The classical texts of Chinese medicine have acknowledged some potential toxicities, and Chinese material medica since antiquity have discussed methods to avoid known toxicities.⁴ In some cases, herbs that are considered dangerous on their own (eg, ephedra or ma huang) appear to be used safely in the context of traditional Chinese medicine formulas. In fact, the Food and Drug Administration ruling to ban the sale of ephedra does not apply to traditional Chinese medicine formulas (nccam.nih.gov/health/alerts/ephedra/consumeradvisory.htm, accessed 1 March 2004). A study of 1,500 patients receiving Chinese medicines in a German hospital for Chinese medicine found that 14 patients had elevated liver enzymes (elevation of more than twofold for alanine amino transferase [ALT]).³ In one case, a causal relationship with Chinese medicines appeared likely, and in the others, it was possible even though all 14 patients were also taking Western medicine. Follow-up values of ALT within 8 weeks of discharge were normal in 11 patients (6 of them were still taking Chinese herbs) and nearly normal in the others. More than 6,000 patients have been treated in that TCM hospital without any identified cases of serious hepatic injury.

Acupuncturists who have extra training in herbal medicine (for example, are Diplomates in Herbology from the National Certification Commission for Acupuncture and Oriental Medicine) should have sufficient training to minimize classically identified Chinese medicine toxicities. Additional risks have emerged, however, including substitution of different herbs as a result of inaccurate translation or changes with time in the use of herbs as part of a particular formula, the contamination of patent formulas by toxic compounds and pharmaceutical medications, and herb-herb or herb-drug interactions. Examples of these are given below.

The substitution of the Chinese herb *Aristolochia fangchi* for the herb *Stephania tetrandra* appeared to be the cause of more than 100 cases of extensive interstitial fibrosis of the kidneys in Belgian women following a weight loss regimen that included Chinese herbs.⁵ In this particular instance, the formula was prescribed by Western physicians with no training in herbal medicine. The 2 herbs could easily be confused, because the Chinese characters and the pin yin name of both herbs are identical. In China, they are distinguished by prefixing the Chinese characters with different epithets. Another variant of this concern could occur if the plant sources of a traditional herb have changed with time. For example, renal failure has been reported in China from large doses of *Aristolochia manshuriensis*, which is the main source of the Chinese herb Mu Tong.⁶ Historically, however, the source plants for Mu Tong were originally plants from the *Akebia* genus (until the 17th century) and then from the *Clematis* genus (until the mid 20th century). Neither of these plants had recorded toxicities in the traditional texts.

Recent studies of toxicities associated with Chinese patent medicines have reported that undisclosed pharmaceuticals or heavy metals are frequently found in products manufactured in Asia⁷⁻⁹ No incidents of contamination by toxic compounds or pharmaceutical medicines have been reported in Chinese herbal products manufactured in the West.⁴ Thus, the use of products manufactured in the West can be recommended as a safety precaution.

The possibility of herb-herb and herb-drug interaction is potentially more problematic because relatively little reliable information is available about interactions between Chinese herbs and other compounds.¹⁰ Several Chinese herbs (danshen, or *Salvia miltiorrhiza*, and dong gui, or *Angelica sinensis*) have been reported to interact with warfarin.⁴ In both situations, the herbs have functions similar to warfarin, so such interactions are not surprising. In fact, it would be quite likely for analogous interactions to occur when patients are taking both herbs and drugs for the same complaint. This possibility underscores the need for clear communication between physicians and acupuncturists when herbal medicine is being prescribed. While physicians cannot be expert on all the safety issues related to Chinese medicine, they should ask any acupuncturist who is co-managing a patient about his or her herbal training and about how they keep up on safety issues related to herbs. In addition, they should ensure that the herbalist is aware of any medications the patient is taking. As part of the training required to sit for the acupuncture and herbal medicine licensing examinations, students are required to receive training in those aspects of pharmacology relevant for herbalists, including possible herb-drug interactions, contraindications, and side effects, as well as resources for further information.

Bensoussan et al¹¹ describe the development of a Chinese herbal medicine toxicology database to provide information in English on the toxicities associated with single Chinese herbs. They have selected herbs for initial inclusion in the database because of reputed toxicity or high use in Australia. The database is expected to be commercially available in 2004. Additional information on the safety of Chinese herbal medicine can be found in Kaptchuk.⁴

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