

# Acupuncture, electrostimulation, and reflex therapy in dermatology

CHUNG-JEN CHEN\* & HSIN-SU YU†

*Departments of\* Internal Medicine and †Dermatology, Kaohsiung Medical University, Kaohsiung City, Taiwan, Republic of China*

**ABSTRACT:** Acupuncture is an old therapeutic method that includes both needle and nonneedle acupuncture. Nonneedle acupuncture includes moxibustion, cupping, and acupressure. In the field of dermatology, acupuncture has been reported to be beneficial for the treatment of acne, post-herpetic neuralgia, psoriasis, atopic dermatitis, and urticaria. In acupuncture treatment of dermal diseases, both the filiform needle and the cutaneous needle are powerful tools. In the treatment of refractory dermal diseases, cutaneous needle acupuncture is usually followed by cupping to intensify the therapeutic effect. In cases where needle acupuncture is not possible, acupuncture-like transcutaneous electrical nerve stimulation (TENS) is a good alternative. In addition, reflex therapy based on foot reflex areas may also be an alternative. A lack of controlled studies is the main drawback for the methods mentioned above. However, the experiences from experts in this field may offer us new ideas to resolve refractory disorders in dermatology.

**KEYWORDS:** acne, acupuncture, atopic dermatitis, herpes zoster, psoriasis.

Acupuncture is a term derived from the Latin words *acus* and *punctura*. Originally it meant to puncture the body (at some specific location) by needle. Today the term acupuncture is applied more broadly to include original acupuncture (*acus-punctura*) and many related methods such as moxibustion, cupping, acupressure, etc. (Table 1). Needle acupuncture is therefore the term used now to describe the original acupuncture (1). Though needle acupuncture is well-known today, most physicians in the Western world may not know that there are many kinds of needles that can be applied in needle acupuncture. In ancient acupuncture texts, nine kinds of needles have been described (2). At present, at least four kinds of needles are still applied in the East.

The filiform steel needle is the most popular type. However, other needles are also useful in the treatment of dermal diseases, including ear

**Table 1.** Classification of acupuncture

---

Needle acupuncture
Filiform needle
Lancet or bloodletting needle
Cutaneous needle
Ear needle
Nonneedle acupuncture
Moxibustion
Cupping
Acupressure

---

needles, lancet or bloodletting needles, and cutaneous needles (3). Different needles have different targets in acupuncture therapy. For example, the filiform steel needle is used to puncture the acupoint in the body (Fig. 1), whereas the ear needle is directed to the microacupoint on the ear. The lancet or bloodletting needle is used to puncture superficial engorged veins, and the cutaneous needle is used to puncture superficial skin. In the field of dermatology, the cutaneous needle has had a special role in treating chronic, refractory diseases such as psoriasis, neurodermatitis, and atopic eczema. This needle is applied to

Address correspondence and reprint requests to: Chung-Jen Chen, MD, Division of Allergy, Immunology, and Rheumatology, Department of Internal Medicine, Kaohsiung Medical University, Kaohsiung, Taiwan 80708, ROC, or email: chungjen@kmu.edu.tw.



**Fig. 1. A filiform needle inserted into Quchi (LL11).**

superficially puncture skin without involving the subcutaneous tissue. The cutaneous needle is also known as the seven-star needle or plum blossom needle because of its shape (Fig. 2).

Traditionally needle acupuncture is performed manually. However, with advances in the area of electrostimulation, electroacupuncture was developed. It combines conventional needle acupuncture with electric stimulation. With electroacupuncture, it is easier to get the *De-Qi*, which is strongly related to the effect of acupuncture therapy. The sense of fear that some patients experience from needle puncture prompted the development of nonneedle acupuncture techniques such as acupuncture-like transcutaneous electrical nerve stimulation (TENS). With acupuncture-like TENS, a 2–4 Hz stimulation may be best in terms of eliciting the same effects as needle acupuncture (4).

In the practice of acupuncture, besides acupoints (conventional body acupoints and ear microacupoints) we can also stimulate other areas or zones of the body either by needle, electricity, or manually. These areas or zones usually feel ten-

der, heavy, band-like, or nodule-like on palpation and are called reflex areas or zones. These reflex areas or zones may exist anywhere, including the back, hand, orbital area, or foot. To date, the most organized reflex area may be the foot reflex system (5). As the foot reflex area is hard to needle, manual manipulation is usually preferred. Currently several types of machines are available that provide manual manipulation of the foot reflex area. These related therapies are known as reflex therapy (6).

Indeed, reflex therapy may be regarded as another kind of acupuncture-like therapy. Basically both acupoints and reflex zones are related to organ or body dysfunction and can be applied to adjust these dysfunctions.

## Disease treatments

### Acne

Acne is one of the most common problems in adolescents. Acupuncture has been used for a long time to effectively treat acne and was studied by Dai in 1997 (7). However, because of the convenience and effectiveness of drug therapies, acupuncture has been left behind in the treatment of acne.

In cases where there is a history of drug allergy or intolerance, needle acupuncture is still useful. Though many points have been reported to be effective for acne, Hegu (LI.4) and Quchi (LL.11) are the most popularly applied points (8). In addition, Zusanli (St.36), Sanyinjiao (Sp.6), Dazhui (Du.14), Xuehai (Sp.10), and local points may be added as indicated. Zusanli (St.36) is indicated in cases accompanied by functional gastrointestinal disturbance. Sanyinjiao (Sp.6) is indicated in patients with dysmenorrhea or irregular menstrual cycle. Patients are usually treated once a day or three times a week, for a total of 20–24 treatments. Following the strategies discussed above, treatment effectiveness is usually greater than 90% (7). In cases where needles cannot be used, acupuncture-like TENS can be applied to the above points.

In reflex therapy, the reflex zones of the foot, which include the adrenal gland zone, ureter and bladder zone, and liver and gallbladder zone, are used (6). However, there are no formal studies.

### Herpes zoster

Herpes zoster is a common disease in the practice of dermatology. Though medication with antiviral



**Fig. 2. (A) A cutaneous needle (upside down). (B) Needling by a cutaneous needle.**

therapy has improved in recent years, postherpetic neuralgia is still a troublesome complication for both patients and physicians. Lewith and Field (9) reported that 40% of their patients with postherpetic neuralgia had gained significant pain relief with acupuncture. Soon after, however, Jolly (10) reported negative effects. In 1984, Fisher et al. (11) reported that about 60% of their patients had positive results with acupuncture. However, these studies all lacked controls.

The only randomized controlled study came from Great Britain (12). A total of 62 cases were enrolled in a single-blind, randomized controlled study to evaluate the effect of auricular and body acupuncture compared with placebo (mock TENS). Seven patients in the placebo group and seven patients in the acupuncture group experienced pain relief at the end of treatment. There was no difference in the pain relief between these two groups.

In 2000, Wu and Guo (13) reported a new method using electroacupuncture at the Huatuo-

jiagi point (EX-B2), corresponding to the pain area, combined with needling at other points depending on the patient involved. They found that 78% of patients were cured and 22% showed marked improvement. This report seems promising, but needs further confirmation by more controlled studies. The EX-B2 Huatuojiagi point may be the key for postherpetic neuralgia because this point is located around the root of spinal nerves, which is the vital region for transmission of neural impulses. However, caution must be used when inserting a needle around this point because improper needling in this area may lead to pneumothorax or injury of visceral organs. Therefore electrostimulation at this point by acupuncture-like TENS may be a safer alternative.

Finally, Shu et al. (14) reported the use of a combination of filiform needle acupuncture and cutaneous needle acupuncture in the lesion area. In their study, 83% of patients were cured after two sessions of therapy.

## Psoriasis

Acupuncture has been used for the treatment of psoriasis for many years, but detailed descriptions are lacking in terms of technique and outcome. Fortunately, Liao and Liao (15) have made progress in this field in recent years. Using filiform needle acupuncture to stimulate Dazhui (Du.14), Fengmen (UB.12), Zusanli (St.36), Sanyinjiao (Sp.6), Xuehai (Sp.10), Quchi (LI.11), Weizhong (UB.40), and related acupoints, they treated 61 cases of psoriasis with poor response to Western medical management. After an average of nine sessions of acupuncture treatment, half of the 61 patients had complete or near-complete clearance of their skin lesions, one-third had partial improvement, and 15% did not improve. Though this study lacked a control group, we nevertheless regard this study as invaluable. This is because all the patients in this study were refractory to modern therapy.

Later there was a controlled study by Jerner et al. (16) in Sweden which reported that classical needle acupuncture was not superior to sham therapy (minimal acupuncture) in the treatment of psoriasis. Though methodologically more thorough, the primary drawback of this study was its lack of description in terms of acupuncture points and techniques. In addition, the sample size was small (35 received acupuncture, 19 received sham acupuncture).

In general, the following acupoints are preferred by most acupuncturists: Quchi (LI.11), Xuehai (Sp.10), and Sanyinjiao (Sp.6). Usually the above acupoints are treated with filiform needle acupuncture. Local lesions can be treated by cutaneous needle acupuncture, followed by cupping (Fig. 3) once a week to intensify the effect (17). Cutaneous needle acupuncture combined with cupping is very important for refractory dermal disorders in traditional acupuncture therapy.

## Atopic dermatitis

Atopic dermatitis (or atopic eczema) is a chronic, recurrent, inflammation of the skin characterized by intense itching, which tends to affect specific parts of the body, particularly the flexures (creases) (18). For this reason it is also called four-flexures-wind (se-wan-fong) in traditional Chinese medicine. Indirect moxibustion with herb cake on the lesion site once a day for 7 days was reported to be effective after 2 weeks of therapy (45% cured, 55% markedly improved) (19). In addition, Adaskevich (20) reported that a combination of needle acupuncture and millimeter



**Fig. 3. The cupping procedure.**

wavelength electromagnetic radiation (MM) therapy is superior to MM therapy alone in patients with severe atopic dermatitis.

In general, Xuehai (Sp.10), Quchi (LI.11), and Zhubin (Ki.9) are usually beneficial in the treatment of atopic dermatitis by filiform needle acupuncture. Cutaneous needle acupuncture on the lesion site can be added in refractory cases.

Children with atopic dermatitis are often nervous and afraid of needles. In these cases, acupuncture-like TENS is indicated.

In foot reflex therapy, the reflex zones corresponding to the kidney, ureter, bladder, adrenal gland, and lymph node are suggested empirically (6), but has not been confirmed.

## Urticaria

Acupuncture is also effective for both acute and chronic urticaria (21). A combination of ear acupuncture and conventional filiform needle acupuncture seems to be the best strategy for chronic urticaria.

## The ABCs of Acupuncture Therapy in Dermal Disease

## A. Quchi and Xuehai acupoints

is essential in dermal diseases.

## B. Cutaneous needle acupuncture, followed by Cupping

are able to overcome refractory diseases.

## C. To tonify or sedate depending on energy deficiency or excess

will make a more perfect therapy.

## 皮膚病針灸治療要訣

曲池血海穴 膚病不可缺

皮針並拔罐 難病亦可解

虛補實則瀉 治療更完備

Fig. 4. A poem by the authors: The ABCs of acupuncture therapy in dermal disease.

### Philosophy in acupuncture

The application of cutaneous needle acupuncture is a novel technique in the Orient. Its therapeutic target is the skin area, not the traditional acupoint. In traditional Chinese medicine, it is believed that the skin is the origin of various types of diseases and that the skin is related to the energy of the inner organs. Therefore targeting the cutis is as important as targeting the acupoint (22).

Classic acupuncture specialists place significant attention on an individual's body energy and prescribe different managements in order to attain a so-called balance of energy. In cases with energy excess, strong stimulation is preferred to decrease the body energy (known as sedating). In contrast, in cases with energy deficiency, mild stimulation is preferred to intensify the body

energy (known as tonifying). Moxibustion is also indicated in cases with energy deficiency, because of its tonifying properties. Simply put, the attainment of energy balance is essential for a state of good health (23).

To assist in the learning of basic acupuncture and to create a strong impression on the reader, the author has written a poem on the ABCs of acupuncture treatment of dermal diseases (Fig. 4). This style of poetry has traditionally been used throughout ancient times to pass down the knowledge and experience of acupuncture to younger generations.

### Possible mechanism

Why acupuncture and its related methods work for patients with various kinds of dermal diseases is a puzzle today. However, through the study and recognition of neuroimmune interactions in the skin (24), we may be able to clarify this puzzle in the near future.

At least three key components are implicated in acupuncture stimulation: the hypothalamus-pituitary-adrenal axis, the autonomic nervous system, and brain-derived neurotrophic factor. As early as 1979, Malizia et al. (25) found that electroacupuncture can cause  $\beta$ -endorphin and corticotrophin release into the peripheral blood. Later, Lee et al. (26) found that acupuncture on Zusanli (St.36) significantly increases serum levels of cortisol. Furthermore, by functional magnetic resonance imaging (MRI), it was proven that the hypothalamus-limbic system is distinctively activated by manual needle acupuncture (27,28). Therefore we speculate that the above mechanisms may play some role in the acupuncture treatment of dermal diseases.

### Conclusion

Clinical observation has shown acupuncture to be beneficial for patients with acne, postherpetic neuralgia, psoriasis, atopic dermatitis, and urticaria. In the practice of acupuncture therapy, not only conventional filiform needle, but also cutaneous needle acupuncture and cupping can be applied to obtain the best results. In cases where needle acupuncture is not possible, acupuncture-like TENS is a good alternative.

In the future, randomized controlled studies need to be done to verify the effectiveness of these treatments. Acupuncture may provide a good way

to investigate the complex neuro-endocrine-immune interactions in the skin, and it may provide new treatments for refractory dermal disorders.

## Acknowledgment

We thank Dr. Chin-Chuan Tsai for his help in the collection of references from mainland China. The figures provided by the Club of Chinese Traditional Medicine of Kaohsiung Medical University are appreciated as well. Lastly, we thank Henry Yuan for his editorial assistance.

## References

1. NIH Consensus Development Panel on Acupuncture. Acupuncture. *JAMA* 1998; **280**: 1518–1524.
2. Wang B. Huang-Di-Nei-Jing, 2nd ed. [in Chinese]. Taipei: Wen-Guang, 1992:285–287.
3. Shanghai College of Traditional Medicine. Acupuncture: a comprehensive text. Seattle: Eastland Press, 1987:404–435.
4. Pomeranz B. Electroacupuncture and transcutaneous electric nerve stimulation. In: Stux G, Pomeranz B, eds. Basics of acupuncture, 4th ed. Berlin: Springer-Verlag, 1998:272–282.
5. Dale RA. Podotherapy: a microacupuncture system. *Am J Acupunct* 1977; **5**: 207–227.
6. Masafret H. Good health for the future (in Chinese translation). Taipei: Chang-Gung, 1982:217–230.
7. Dai GQ. Advances in the acupuncture treatment of acne. *J Tradit Chin Med* 1997; **17**: 65–72.
8. Lee FP. Acupuncture treatment of facial acne: 30 cases [in Chinese]. *Chin Acupunct* 1983; **3**: 39.
9. Lewith GT, Field J. Acupuncture and postherpetic neuralgia. *Br Med J* 1980; **281**: 622.
10. Jolly C. Acupuncture and postherpetic neuralgia. *Br Med J* 1980; **281**: 871.
11. Fisher MV, Behr A, von Teumont J. Acupuncture—a therapeutic concept in the treatments of painful conditions and functional disorders. Report on 971 cases. *Acupunct Electrother Res* 1984; **9**: 11–29.
12. Lewith GT, Field J, Machin D. Acupuncture compared with placebo in post-herpetic pain. *Pain* 1983; **17**: 361–368.
13. Wu J, Guo Z. Twenty-three cases of postherpetic neuralgia treated by acupuncture. *J Tradit Chin Med* 2000; **20**: 36–37.
14. Shu YW, Yang XM, Chein JC. Needle acupuncture by cutaneous needle and filiform needle for treatment of postherpetic neuralgia: 60 cases [in Chinese]. *ITCM* 2001; **18**: 64.
15. Liao SJ, Liao TA. Acupuncture treatment for psoriasis: a retrospective case report. *Acupunct Electrother Res* 1992; **17**: 195–208.
16. Jerner B, Skogh M, Vahlquist A. A controlled trial of acupuncture in psoriasis: no convincing effect. *Acta Derm Venereol* 1997; **77**: 154–156.
17. Zhou JH. Combination of cutaneous needle acupuncture and cupping for treatment of psoriasis: 15 cases [in Chinese]. *Zhong Guo Min Jin Liau Fa* 2001; **9**: 17.
18. Kay AB, Lessof MH. Allergy. Conventional and alternative concepts. A report of the Royal College of Physicians Committee on Clinical Immunology and Allergy. *Clin Exp Allergy* 1992; **22(suppl 3)**: 1–44.
19. Wang DZ. Indirect moxibustion with herb cake for treatment of atopic dermatitis: dermatitis: 20 cases [in Chinese]. *China Acupunct* 2000; **20**: 612.
20. Adaskevich VP. Clinical efficacy and immunoregulatory and neurohumoral effects of MM therapy in patients with atopic dermatitis. *Crit Rev Biomed Eng* 2000; **28**: 11–21.
21. Chen CJ, Yu HS. Acupuncture treatment of urticaria. *Arch Dermatol* 1998; **134**: 1397–1399.
22. Huang WS. Needling methods in acupuncture. In: Huang WS, ed. Acupuncture science, 8th ed. [in Chinese]. Taipei: Cheng Chung, 1997:43–100.
23. Stux G. Technique of acupuncture. In: Stux G, Pomeranz B, eds. Basics of acupuncture, 4th ed. Berlin: Springer-Verlag, 1998:202–213.
24. Darsow U, Ring J. Neuroimmune interactions in the skin. *Curr Opin Allergy Clin Immunol* 2001; **1**: 435–439.
25. Malizia E, Andreucci G, Paolucci D, Crescenzi F, Fabbri A, Fraioli F. Electroacupuncture and peripheral beta-endorphin and ACTH levels. *Lancet* 1979; **2**: 535–536.
26. Lee SC, Yin SJ, Lee ML, Tsai WJ, Sim CB. Effects of acupuncture on serum cortisol level and dopamine  $\beta$ -hydroxylase activity in normal Chinese. *Am J Clin Med* 1982; **10**: 62–69.
27. Wu MT, Hsieh JC, Xiaong J, et al. Central nervous pathway for acupuncture stimulation: localization of processing with functional MR imaging of brain-preliminary experience. *Radiology* 1999; **212**: 133–141.
28. Cho ZH, Chung S, Jones JP, Park JB, Lee HZ, Wong EK. New findings of the correlation between acupoints and corresponding brain cortices using functional MRI. *Proc Natl Acad Sci USA* 1998; **3**: 2670–2673.