

Introduction of acupuncture for pain relief

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Review

Abstract: This study generally introduces the acupuncture treatment for pain relief. It introduces the internal and external causes of pain based on Traditional Chinese Medicine (TCM) theories, as well as the different clinical manifestations for each type of pain conditions. It also discusses pain diagnosis and its treatment strategies according to the theory of TCM.

Key words: Pain management; traditional chinese medicine; acupuncture; pain relief; alternative medicine.

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Introduction

Pain is one of the most common reasons for Americans to access the health care system. It is a leading cause of disability and a major contributor to health care costs (1). The causes for pain can defer on severity and condition, and treatment can range from drug prescription, physical therapy, surgery, and nerve block etc. Presently, people often seek alternative pain management options, such as acupuncture, for its effectiveness, ease of application, and low probability for complication.

Research studies have also proven the effectiveness of acupuncture for pain relief. In a study published by *Archives of Internal Medicine* in 2012, researchers reviewed the results of placebo-controlled trials involving nearly 18,000 participants on the effectiveness of pain management with acupuncture. The overall result was promising, showing that acupuncture helps relieve pain by approximately 50% (2). Furthermore, many studies have concluded that acupuncture is effective in treating various conditions (3-13), especially for pain relief, such as headache (5), chronic low back pain (6), neck pain (7-9), chronic knee pain (10-11), hip pain (12), shoulder pain (13) and so on.

To better understand pain in Traditional Chinese Medicine (TCM) theories and practice, this article will discuss the contributing factors of pain, types of pain, and diagnostic features of each condition with respect to TCM theories. In addition, it also provides perspectives and guidance for using acupuncture to treat pain conditions based on the authors' clinical experiences.

Causes of pain

Pain is the body's unpleasant warning sign for illnesses such as physical or psychological distress, inflammation, and infection.

In TCM theories, the causes of pain are often discussed

through two perspectives: external pathogenic factors and internal disorder.

Pain caused by external pathogenic factors

Understanding External Pathogenic Invasion and Pain

In Traditional Chinese Medicine, pain is a one of the main manifestations of Bi Syndrome (Painful Obstruction Syndrome). Per *Inner Canon of Huangdi Basic Questions Theories of Bi Syndromes*, "the invasion of pathogenic Wind, Cold and Dampness will lead to an obstruction in the meridians and Bi Syndrome may take place." Bi Syndrome can cause pain, heavy sensation, and limitation of movements.

However, the causes of pain can go beyond external pathogenic factors. Per *Inner Canon of Huangdi Basic Question Discussion on Acupuncture Methods*, "Pathogenic factors can not cause diseases if the vital Qi is sufficient." Also stated in *Inner Canon of Huangdi Basic Question Discussion of Four Kinds of Febrile Diseases*, "Where pathogenic factors accumulate, the parts of the body must be deficient in the vital Qi." Thus, deficiency of the vital Qi, which can lead to the inability for body to defeat external pathological damage, can be the root cause to lead to the occurrence of pain (14).

Clinically, the following three elements can be observed when pain is mainly caused by external pathogenic invasion:

- Strong pathogenic factors
- Insufficient or weak vital Qi (anti-pathogenic Qi)
- Improper diet and unhealthy life styles

Weak vital Qi is the only definitive reason for pain syndrome. To illustrate this point, we can observe that people who live in cold, windy and humid areas do not all suffer from pain or Bi syndrome. People who do suffer from pain conditions often have weak vital Qi and/or unhealthy lifestyles. Therefore, the occurrence of pain

Table 1. Difference of external pathogenic invasions and incomplete elimination of exogenous factors.

External Pathogenic Invasions	Incomplete Elimination of Six Exogenous Factors
<ul style="list-style-type: none"> • Acute onset • Relatively short duration • Often related with seasonal changes • Pain mostly on the superficial part of the body, such as the limbs • Light disturbance to the Internal Zang-Fu organs • Being accompanied by some external symptoms • Relative easy to treat with quick and effective results 	<ul style="list-style-type: none"> • Initially acute onset. However, pathogenic factors may remain invisible and dormant, creating potential risk of further development • Relatively long duration • May be related with seasonal changes • Pain remains on the superficial part of the body • Heavy disturbance to the Internal Zang-Fu organs • Relatively long treatment with inconsistent results

syndrome is a result of both external pathogenic invasions as well as underlying energetic factors.

In addition, incomplete elimination of six exogenous factors (wind, cold, summer-heat, dampness, dryness and fire) may cause pain. As we encounter many external pathogenic factors in our daily life, a healthy body is able to eliminate such pathogens effectively. However, when the vital Qi is weak, such exogenous factors may linger in body, which can progressively lead to pain. This is slightly different than the direct invasion of external pathogenic factors. See Table 1 below for a summary of different clinical symptoms for the two scenarios.

Lastly, infectious agents can also cause pain. Take Fibromyalgia Syndromes and Lyme disease for example, preliminary symptoms for both conditions may include fever, headache and fatigue. If left untreated, symptoms may progress to limitation of movements, joint pain, headaches with neck stiffness, and heart palpitations etc.

Types of external pathogenic factors and differentiating syndromes

Traditional Chinese Medicine is based on clinical manifestations. It is crucial to understand each pathogenic factor by analyzing symptoms and signs. In addition, in order to provide a basis for treatment, it is also important to differentiate syndromes of the conditions in accordance to Theory of the Six Channels.

External pathogenic factors

In TCM theories, the main types of external pathogenic factors that cause pain are wind, cold, and dampness.

Wind is the primary cause for pain syndromes. It is a common climatic condition that exists in all four seasons. Wind tends to move, especially upward and outward. It is also subject to rapid changes. Wind often attack the body simultaneously with other pathogenic factors to cause diseases. For example, wind-cold-dampness of arthritis is a common reason for both acute and chronic pain.

Cold prevails in winter and also exists in the other seasons. Cold is a Yin pathogen that tends to impair Yang Qi. When Yang Qi is weakened, cold is likely to damage Heart, Stomach, Spleen or Kidney. In addition, cold is coagulative, and can create blockage and stagnation in the meridians, causing various kinds of pain. Further, cold can create constriction. When cold attacks the body, it causes contractions in muscles, channels and tendons, thus leading to spasm and pain.

Dampness prevails in late summer when the weather

is warm and humid. The invasion of dampness is often closely related to the external environment as well as the actual condition of the Middle Warmer. Dampness is heavy, turbid and stagnant in nature. Unlike wind, dampness tends to go downward of body. Symptoms of dampness are usually found in the lower parts of the body. Similar to cold, dampness is a Yin pathogen that impairs Yang Qi, leading dysfunctions in Heart, Stomach, Spleen, or Kidney.

Differentiating syndromes

Based upon *Treaties on Febrile and Miscellaneous Diseases* by Zhang Zhongjing, pain syndromes can be differentiated based on the condition of the vital Qi of human body as well as the state of the pathogenic factors in accordance with the principle of Yin and Yang.

In clinical experiences, pain caused by external invasion could be subdivided into six syndromes as listed below. A single or a mix of syndromes may be observed from patients. The common types of mixed syndromes are Taiyang and Shaoyang syndrome, Taiyang and Taiyin syndrome, Taiyang and Shaoyin syndrome, and Taiyang and Jueyin syndrome. Table 2 below summarizes the different symptoms of each of the six syndromes:

Pain caused by internal disorder

Besides the external pathogenic factors, internal factors such as prolonged emotional disturbance, eating disorder, improper lifestyle, constitutional dysfunction and unhealed physical injury etc., can lead to pain. In clinical experiences, such internal factors are often cause chronic pain, which can be more complex in nature, and require tailored treatment.

Compared to pain caused by external factors, internal disorders have distinct features:

- Gradual onset
- Relatively long duration
- Pain mostly in organs, or in both organ and superficial parts of the bod
- Disturbance primarily to the Internal Zang-Fu organs
- Relatively difficult to treat

Internal factors can cause pain. Traditional Chinese Medicine believes that emotional state has a close relationship with the viscera organs. Among all the internal disorders, internal injury by seven emotions is one of the primary trigger of pain. Seven emotions, namely: joy,

Table 2. Different symptoms of six pain syndromes.

Type	Symptoms
Taiyang Syndrome	<ul style="list-style-type: none"> • Aversion to cold • Feverish feeling • Headache • Neck pain and tension • Muscle pain and tingling • Lack of sweating or slight sweating • Stiffness of limbs • Thin and white tongue coating • superficial pulse
Shaoyang Syndrome	<ul style="list-style-type: none"> • Alternative chill and feverish • Temporal headache • Neck pain and tension • Feeling of fullness in chest and hypochondriac region • Nausea or vomiting with poor appetite • Thin and yellow tongue coating • Wiry and slight rapid pulse
Yangming Syndromes	<ul style="list-style-type: none"> • High fever • Front headache • Severe muscle and joint pain • Big thirst • Big sweating • Hotness and burning feeling over the body • Constipation • Abdominal pain • Restlessness • Red tongue, yellow coating • Rapid and forceful pulse
Taiyin Syndromes	<ul style="list-style-type: none"> • Abdominal pain with cold sensation • Muscle pain with weakness • Heaviness and cold of the four limbs • Nausea or vomiting with poor appetite • Loose stool or diarrhea • Pale tongue with thin and white and greasy coating • Deep and thready pulse
Shaoyin Syndromes	<ul style="list-style-type: none"> • Extreme fatigue or somnolence • Lack of water retention in the body • Scanty urination • Poor memory and concentration • Lower back pain and weakness • Obesity • Pale and wet tongue, thin and white coating • Deep, thready and slow pulse
Jueyin Syndromes	<ul style="list-style-type: none"> • Thirst • Restlessness and hot feeling in the Heart and chest • Hunger with no appetite • Headache in the vertex

anger, melancholy, anxiety, grief, fear and terror are responses of body to external stimulation. However, when there is overwhelming emotional fluctuation or long-term emotional impairment, internal injuries may occur, leading to functional disorders in viscera organs. A common manifestation of such disorders is pain syndrome.

Emotions also have strong connections with the Five Elements. According to *Plain Questions Yin-Yang Doctrine and Its Relation with Natural Phenomena*, "Man has five viscera which may bring on five moods (visceral-Qi) to produce joy, anger, grief, melancholy and fear." TCM theories believe that Heart is related to joy, spleen to melancholy, lung to grief, liver to anger, and kidney to fear. Therefore, emotions could influence corresponding organs, causing various damages. When it comes to pain syndromes, Heart and Liver are the two primary organs that were involved with emotional disorder. Consequently, Qi, Blood and Fire are the chief pathological results of such condition.

Because of the complex nature of chronic pain, treating such condition is often difficult and requires efforts from

both practitioner and patient. Skillful acupuncture techniques are essential for practitioners to cope with complex conditions. However, acupuncture is merely an assistant therapy. The key to healing is the depending on prescription of life styles changes for patients to resolve the internal root cause of pain.

Diagnostic principles and applications

The main diagnostic methods of Traditional Chinese Medicine include inspection, interrogation, auscultation and olfaction, and pulsing and palpation. To achieve a comprehensive and reliable diagnosis, the four methods should be adopted simultaneously in clinical examination. Inspection and palpation, however, are extremely important when it comes to diagnosis of pain syndromes.

Inspection and palpation

Inspection

In Traditional Chinese Medicine, inspection is a diagnosis technique that includes observation of facial ex-

pression, vitality, physical state and tongue condition. When analyzing pain syndromes, practitioners should focus on observing the following:

- Physical movement
- Pain area
- Meridians which pass through the painful areas
- Local skin changes, especially modifications in color, rash and desquamation, eruption and pigmentation, etc
- Overall vitality and spirit
- Tongue conditions

Palpation

Palpation is a Traditional Chinese Medicine technique that practitioners use to gather clinical information of their patients by feeling, touching, pushing, and pressing certain parts of the patients' body. Palpation provides a direct way for practitioners to learn about patients' body condition as well as local abnormal changes. When diagnosis of pain using palpation technique, the following areas should be prioritized during examination:

- Palpating of the painful areas
- Palpating Back-Yu Points and Front-Mu Points
- Palpating Ah Shi points
- Palpating any changes that were observed in muscles, or under the skin, especially the nodulation and local temperature changes

Furthermore, practitioners should pay special attention to the changes discovered on patients' body during palpation, such as:

- Tension or spasm
- Discoloration
- Swelling
- Blisters
- Hotness
- Stiffness
- Flaccidity, softness or tenderness

Any abnormal changes imply some underlying pathogenic factors and provide important basis for developing treatment plan.

Diagnosis of pain syndromes

In TCM theories, pain syndromes can have various causes and manifestations. Therefore, in order to best collect and analyze clinical materials to treat the conditions effectively, TCM practitioners should carefully observe the patient's body as an holistically, focusing answering the following questions:

- Duration of Pain
- Severity of Pain
- Causative Factors of Pain
- Functional Disorder or Organic Sickness
- Physical Damage or Mental Disturbance
- Subjective Feeling or Objective Observation

By using the TCM diagnostic methods, practitioners should be able to collect comprehensive information to

provide an accurate basis for treatment.

Treating pain with acupuncture

TCM has applied acupuncture for thousands of years to treat pain in China. Acupuncture's pain relief effects have studied by many research groups to understand the underlying mechanisms. A study was conducted by the author Guanhu Yang and his fellow researchers to study the mechanism by observing the effect of electro-acupuncture in local and distant acupoints. Their study indicated that the pain alleviation from acupuncture might be associated with the spinal substance P when electro-acupuncture was applied on local and distant points on rats (15). Additionally, the knowledge of endorphins and enkephalins provide another physiological basis for acupuncture's pain relief mechanism (16). Further, a study published by Dr. Ji-Sheng Han and his group also observed increased release of neuropeptides when acupuncture or electrical stimulation was applied in acupoints, which elicited profound physiological effects and even activating self-healing mechanisms (17).

The main goals of acupuncture for pain treatment is to remove causative factors of pain in order to rebalance body. Western Medicine treatments, on the other hands, often focuses on relieving pain, without resolving the root cause. To efficiently treat pain syndromes with TCM, the following three principles should be the focused on during treatment: Symptomatically relieving pain, removing causative factors, and regulating Shen.

Relieving pain with acupuncture

The following acupuncture points are often used for quick, effective and potent pain relief:

- Luo-Connecting points
- Yuan-Source points
- Xi-Cleft points
- Stream points
- Ah Shi points from the local or adjacent areas or distal area, etc.

In most cases, reducing (sedating) method is applied because Qi or Blood stagnation is usually the chief pathological factor for pain syndromes. It is very important to bear in the mind that these points should be selected mainly from these internal organs or meridians which are involved with the pain. For instance, if there is stomach pain, these points could be selected from the Stomach channel chiefly. For more specific areas of pain, see Table 3 below for corresponding acupuncture points.

Removing causative factors for pain

Pain recurrence is likely if the underlying cause is not treated. Thus, resolving the causative factors is the most important goal in the treatment plan. As discussed, pain can have various causative factors from external pathogenic attacks, weak vital Qi, or internal emotional disorder etc. An accurate diagnosis is essential to resolve root causes of pain. When applying acupuncture treatment, TCM practitioner should focus on the following four treatment principles:

Table 3. Acupuncture point chart for pain treatment.

Shoulder to Hip	
HT-1 to KI-11	LI-15 to ST-30
PC-2 to LR-12	TE-14 to GB-30
LU-2 to SP-12	SI-10 to BL-36
Elbow to Knee	
HT-3 to KI-10	LI-11 to ST-35
PC-3 to LR-8	TE-10 to GB-34
LU-5 to SP-9	SI-8 to BL-40
Wrist to Ankle	
HT-7 to KI-3	LI-5 to ST-41
PC-7 to LR-4	TE-4 to GB-40
LU-9 to SP-5	SI-4 to BL-62

- Remove causative factor
- Restore organ functionality
- Repair physiological damage
- Reestablish spiritual balance

Besides the aforementioned acupuncture points (Luo-Connecting points, Yuan-Source points, Xi-Cleft points, and A Shi points) to relieve pain, the following points are recommended as a part of the treatment regimen...

- Five Shu points
- Eight Influential points
- Eight confluence points
- Front-Mu points
- Back-Shu points
- Mother or Son points, etc.

Pain syndromes can be treated differently based on clinic manifestations according to its impacts to Zang-Fu organs. Table 4 and table 5 below is created to demonstrate the recommended acupuncture points as well as treatment methods in order to remove the causative factors of pain.

As Qi or Blood stagnation is the chief pathogenic factor of pain, reducing (sedating) method is applied in most cases. Additionally, a combination of reducing (sedating) and reinforcing (tonifying) method should also be considered when it is necessary to reduce the Excess and reinforce the Deficiency simultaneously.

Table 4. Tonification prescriptions for conditions of deficiency.

Meridian	Tonify		Sedate	
	Horary Mother Channel	Pt. on Mother affected channel	Horary controlling channel	Pt. on Control affected channel
Lung	SP 3	LU 9	HT 8	LU 10
Large intestine	ST 36	LI 11	SI 5	LI 5
Stomach	SI 5	ST 41	GB 41	ST 43
Spleen	HT 8	SP 2	LR 1	SP 1
Heart	LR 1	HT 9	KI 10	HT 3
Small intestine	GB 41	SI 3	UB 66	SI 2
Urinary bladder	LI 1	UB 67	ST 36	UB 80
Kidney	LU 8	Kid 7	SP 3	KI 3
Pericardium	LR 1	PC 9	KI 10	PC 3
San jiao	GB 41	SJ 3	UB 66	SJ 2
Gallbladder	UB 66	GB 43	LI 1	GB 44
Liver	KI 10	LR 8	LU 8	LR 4

Regulate shen and vital energy

All different kinds of pain and skin irritation are related to Heart based on Traditional Chinese Medicine theories. It is crucial to calm patients' Heart to regulate their Shen and vital energy. This is similar to the effects that were induced by anesthetic effects in Western Medicine. Patients tend to feel less pain when Shen is regulated and calmed. This is important especially when treating patients with chronic pain or pain caused by emotional disturbance. Furthermore, calmed Heart and regulated Shen also lead to improved sleeping quality, which ultimately helps with pain alleviation.

Based on clinical experiences, the following points have shown to be effective to calm Shen. TCM practitioners can apply two or three of such points during treatment. Sometimes, immediate relief can be observed after application.

- HT 3
- HT7
- PC6
- GB20
- BL15
- Extra Anmian
- CV17
- KI23
- KI24

Such points are effective to encourage patients' confidence for the treatment. Although regulating Shen often provides quick and effective pain relief, the causative factors still remain and needs to be addressed accordingly.

Other supplementary techniques for treating pain

Per TCM practices, acupuncture treatment is only one of many methods to cope with pain. The following techniques are also components of acupuncture:

- Moxibustion
- Ear acupuncture
- Abdominal acupuncture
- Scalpel acupuncture
- Wrist and ankle acupuncture
- Embedding of grain-needles
- Acupotomy

Table 5. Sedation prescriptions for conditions of excess.

Meridian	Tonify			Sedate		
	Horary	Pt.	on	Control	Pt.	on
	controlling channel		affected channel	affected channel		Son Pt. on affected channel
Lung	HT 8		Lu 10			KI 10
Large intestine	SI 5		LI 5			UB 66
Stomach	GB 41		ST 43			LI 1
Spleen	LR 1		SP 1			LU 8
Heart	KI 10		HT 3			SP 3
Small intestine	UB 66		SI 2			ST 36
Urinary bladder	ST 36		UB 40			GB 41
Kidney	SP 3		KI 3			LR 1
Pericardium	KI 10		PC 3			SP 3
San jiao	UB 66		SJ 2			ST 36
Gallbladder	LI 1		GB 44			SI 5
Liver	LU 8		LR 4			HT 8

- Acupoint injection

Combination of such techniques could improve treatment outcomes. Usually, at least two or three techniques are recommended to apply at same time.

In conclusion, pain is a common condition that almost everyone will experience sometime during their life. The time and efforts required to cure pain varies. Traditional Chinese Medicine care provides a sustainable and natural ways to manage pain, as well as to address the underlying root cause of pain. Battling pain may not be an easy process. It requires comprehensive knowledge base and skillful techniques from the TCM practitioners, as well as efforts from the patients.

Conflict of interest

The authors declare no competing financial interests.

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References

1. National Institute of Health. Pain Management Fact Sheet. N.p., Oct. 2010.
2. Vickers A, Cronin A, Maschino A, Lewith G, MacPherson H, Foster N, Sherman K, Witt C, and Linde K. Acupuncture for Chronic Pain Individual Patient Data Meta-analysis. *Arch Intern Med.* 172.19 (2012): 1444-53.
3. Zhang Q. Special issue on basic and clinical research for pain and its management and acupuncture studies. *Eur J Bio Med Res* 2015; 1(2): 1-1.
4. Yue JH, Golianu B, Zeng XX, Wang YM, Hung ES, Sun ZR, et al. Acupuncture for urinary retention after stroke: a protocol for systematic review. *Eur J Bio Med Res* 2015; 1(2): 7-11.
5. Linde K, Streng A, Jürgens S, Hoppe A, Brinkhaus B, Witt C, et al.

Acupuncture for patients with migraine: a randomized controlled trial. *JAMA* 2005; 293(17):2118-25.

6. Berman BM, Langevin HM, Witt CM, Dubner R. Acupuncture for chronic low back pain. *N Engl J Med* 2010; 363(5):454-61.
7. Sun ZR, Yue JH, Zhang QH. Electroacupuncture at Jing-jiaji points for neck pain caused by cervical spondylosis: a study protocol for a randomized controlled pilot trial. *Trials* 2013;14:360.
8. Sun ZR, Yue JH, Tian HZ, Zhang QH. Acupuncture at Houxi (SI 3) acupoint for acute neck pain caused by stiff neck: study protocol for a pilot randomised controlled trial. *BMJ Open* 2014; 4(12):e006236.
9. Vickers AJ. Statistical reanalysis of four recent randomized trials of acupuncture for pain using analysis of covariance. *Clin J Pain* 2004; 20(5):319-23.
10. Hinman RS, McCrory P, Pirota M, Relf I, Forbes A, Crossley KM, et al. Acupuncture for chronic knee pain: a randomized clinical trial. *JAMA* 2014; 312(13):1313-22.
11. Zhang Q, Yue J, Lu Y. Acupuncture treatment for chronic knee pain: study by Hinman et al underestimates acupuncture efficacy. *Acupunct Med* 2015; 33(2):170.
12. Witt CM, Jena S, Brinkhaus B, Liecker B, Wegscheider K, Willich SN. Acupuncture in patients with osteoarthritis of the knee or hip: a randomized, controlled trial with an additional nonrandomized arm. *Arthritis Rheum* 2006; 54(11):3485-93.
13. Guerra de Hoyos JA, Andrés Martín MdelC, Bassas y Baena de Leon E, et al. Randomised trial of long term effect of acupuncture for shoulder pain. *Pain* 2004;112(3):289-98.
14. Yang GH, Liang S, Wei H. Treatment of Fibromyalgia Syndrome with Traditional Chinese Medicine, *International Journal of Clinical Acupuncture* 2015; 24(2): 97-104.
15. Tu WZ, Lou XF, Jiang SH, Zhang RF, Pang LX, Yang GH, et al. Effect of Electroacupuncture of Local plus Distal Acupoints in the Same Segments of Spinal Cord on Spinal Substance P Expression in Rats with Chronic Radicular Pain. *Zhen Ci Yan Jiu* 2008; 33(1):7-12.
16. Chaitow L. *The Acupuncture Treatment of Pain.* N.p.: Healing Arts Press, 1990.
17. Han JS. Acupuncture: neuropeptide release produced by electrical stimulation of different frequencies. *TRENDS in Neurosciences* 2003; 26(1):17-22.