

Acupuncture Treatment for Low Back Pain in Korea

Kim Yong-Suk

Department of Acupuncture & Moxibustion

College of Oriental medicine

Kyung Hee University, Korea

Abstract

Low back pain (LBP) affects as much as 80% of the adult population. A variety of factors can lead to LBP. Various treatment options have been proposed to provide relief of symptoms.

Acupuncture is a simple, effective, and conservative pain control modality. It is very effective and simple to use in LBP. The application of acupuncture consists of the insertion of needles into certain points and the stimulation of those points either by manipulation or by applying electric pulses or other appliances. In Korea, acupuncture practitioners use disposable stainless steel needles, commonly 40 mm in length and 0.25 mm in diameter. Acupuncture treatment is point-specific along the meridian, which means the selection of the point is very important. The principle of acupuncture treatment for low back pain is to select the local points and also a distal point on the meridian that crosses the painful area. Especially, they may be selected on the base of Sa-Am acupuncture according to the meridian flow and pain characteristics in Korea. The manipulation of needles includes manual twisting, moving the needle up and down, and similar techniques which are essential. Other modalities used are moxibustion, electroacupuncture, laser acupuncture, acupressure, cupping therapy and so on.

The needle would be left for 15-20 minutes. It requires approximately 10 sessions of treatments and 2 to 5 sessions of treatments per week. It usually requires 3-4 sessions whether a patient is likely to respond to acupuncture and often more than this before any long-term relief is obtained, with this varying according to the condition being treated and a person's individual response to acupuncture.

Key words: LBP, acupuncture, meridian, electroacupuncture

Introduction

Because of bipedalism, humans suffer from lower back pain (LBP). Regardless of age and gender, 80% of the population is reported to experience LBP. Sitting long hours in work or study weakens the muscles of the back, and reduces flexibility. Bad posture can bring about LBP, and standing for a long time or carrying a heavy load can degenerate joints or result in sprain of the back muscle.

Lack of power and flexibility, instant overload, degeneration and deformation of the spine, and trauma can all cause LBP, but the fundamental treatment is not yet clear. With the progress of conventional medicine, many new operative techniques are being developed, but until now LBP is treated more conservatively. Among many conservative treatments, acupuncture takes a big part, and is practiced and researched actively around the world.

Corresponding author: Kim Yong-Suk

Department of Acupuncture of Moxibustion College of Oriental Medicine, Kyung Hee University

#994-5, Daechi: 2-dong, Gangnam-gu, Seoul 135-501, Korea

E-mail: ackys@hanmail.net

Acupuncture is a part of Oriental medicine, and it exhibits unique merits by way of stimulating an acupuncture point through means of acupuncture needle, moxibustion, cupping, laser, electric current, pharmacopuncture, bee venom, etc. In this paper, I would like to introduce the practical application of acupuncture treatment for LBP in Korea.

Definition of low back in Oriental medicine

In Oriental medicine, lower back is described as "above the groin and underneath the ribcage." It is supposed to be the part between the 2nd lumbar spine and the lumbosacral or sacroiliac joint. The lower back is thought to be under the influence of Kidney. Kidney stores Essence, and Essence generates Marrow. Marrow nourishes the Bone, therefore when the Essence of Kidney is sufficient there is ample Bone Marrow to grow and strengthen bones. It is said in *Lingshu* (靈樞 本藏篇) that "When Kidney is small the viscera are stable and difficult to harm, when Kidney is big it is prone to disease and LBP so that one cannot bow, when Kidney is low the sacrum hurts, when Kidney is hard there is no back pain, when Kidney is crooked LBP results." This demonstrates the close relationship between Kidney and the lower back in Oriental medicine.

LBP in Oriental medicine

1. Etiology

LBP usually results when the body is affected by Wind, Cold, Dampness or any of the six pernicious factors. They obstruct the Bladder meridian. Trauma to the back by falling from a high place or being hit harms the muscles and blood vessels and causes Blood stasis. Internal injury or long ailment can bring about weakness of Kidney Essence, and in cases of old people, insufficient Essence and Blood cannot nourish the muscle and blood vessels.

2. Classification

LBP is divided into 10 different causes in *Donggeuibogam* (東醫寶鑑).

1) Kidney deficiency type

Excessive sexual activity can damage Kidney and the Essence and Blood cannot protect and nourish the muscles of the back. The lower back hurts indistinctly and one cannot hold up objects. This is due to degenerative changes, in other words, aging process. It occurs frequently in one's 50's, and in

some young adults who indulge in sexual activity.

2) Phlegm type

Phlegm is a type of metabolic waste that moves about the body along meridians around the waist and back and cause pain.

3) Sprain type

Trauma to the back from heaving objects or by falling from height can cause pain. The excess burden to the spines brings about change in intervertebral disc, and the muscles and ligaments that support the vertebra contracts, strains, and sometimes ruptures while trying to balance the instability. Simple strain of the muscles and ligaments is called sprain and the pain is localized to the lower back, but in serious cases the herniated intervertebral disc can result in radiating pain to the lower limb.

4) Blood stasis type

When one fall down or is beaten, bleeding from within the skin cannot be absorbed into the system and cause LBP. Typical symptoms are localized acute pain, worse in the evening.

5) Cold type

Cold pernicious Qi obstructs circulation of Qi and Blood so that one cannot use one's back. Warmth improves the symptom while exposure to cold worsens it.

6) Damp type

Sitting or lying on damp surface for a long time makes the waist heavy and cold. This kind of LBP occurs a lot during rainy season.

7) Dam-heat type

Greasy food induces obesity and LBP as well. A pronounced abdomen or pregnancy brings forward the center of weight, and in the effort to extend the back muscles backwards they contract and cause pain.

8) Qi type

If one is setback in business or desire or any such, Qi becomes stagnant and dysfunction of the Heart Blood makes one unable to stand or walk for a long time. This is typical of people living in the modern world full of stress, their neck and back muscles all tense. This type of LBP is becoming more common than sprain of the back muscles nowadays.

9) Food accumulation type

Indulging in alcoholic beverage and food while working an overload harms Kidney, and the resulting Damp-Heat induces LBP.

10) Wind type

Wind hurts Kidney, and the LBP from this

pernicious Qi shows up on different regions in left and right side of the lower back.

Practical application of acupuncture & moxibustion for LBP

Acupuncture treatment is a kind of stimulation, therefore the effective factors are the substance acupuncture needle is made of, the place acupuncture needle is inserted, and the method of handling the needle.

1. Acupuncture needles

The substance acupuncture needle is made of is selected according to the illness and stimulation point, but in Korea a disposable stainless-steel needle 40mm in length and 0.25 mm in diameter is generally used. Ear acupuncture, subcutaneous acupuncture, Warming acupuncture, Electroacupuncture and laser acupuncture are sometimes used.

2. Posture of patients

LBP patient is treated with acupuncture in supine or prone position. The patient's position is selected according to the state of the pain, whether it is acute or chronic, ipsi-lateral or bilateral. Generally, when applying acupuncture to the waist, lying on one's side is the best position. When lying face down, having a pillow underneath might be help for patients.

3. Selection of acupuncture points

Treatment principle is set and acupuncture points are selected accordingly, following pattern identification through observing the characteristic of the LBP in the four-kind examination in Oriental medicine. Selecting the acupuncture point in a LBP patient is a very important step, just like any other disease. The methods of selecting acupuncture points are classified into the following five ways.

1) Selection according to meridian

This method is a basic way of selecting acupuncture point, divided into two kinds. Local points are painful or tender place directly on the region of pain, or an acupuncture point of nearby meridian. Distal points are acupuncture points of meridians related to the LBP, or points along the neurological distribution.

The acupuncture treatment of LBP is divided into two categories, according to the dermatome and meridian. The Gall Bladder meridian-type manifests pain in the lateral side of the lower limb by

pressing the nerve root at L4~5 level. Acupuncture points in the GB meridian, such as GB31, GB34, GB39 and GB40, are treated. The Bladder meridian-type induces radiating pain along the posterior part of the lower limb by pressing the nerve root at L5~S1 level, therefore points such as BL37, BL40, BL56, BL57, BL60 are added to the standard acupuncture points used in LBP. In a mixed type of the two meridians, acupuncture points of the two meridians are used. Also, there is a way of selecting treatment point along anatomical nerve distribution. The majority of radicular sciatica is caused by herniated inter-vertebral disc. The diagnosis should select specific points from three parallel meridians along the involved lumbo-sacral vertebra: GV, Ex-B2 (Hua Tuo Jia Ji), and BL meridian. E.g., in the case of LBP from pressure to L3 nerve root (placed between the L2 and L3 body), local points of the GV (GV4) and BL meridian (BL23), as well as Ex-B2 beside L2 are treated. Distal points of ST33, ST35, ST36 on the thigh and leg, LR3, ST41, Ex-LE10 on the foot are used.

2) Micro-systems acupuncture

The usual micro-systems acupuncture for LBP is ear acupuncture and Korean hand acupuncture. Corresponding points of painful waist and leg are selected for treatment.

3) Selection according to muscle

When treating the muscles of the painful area, tender points or Trigger points are used. Commonly used muscles are erector spinae, quadratus lumborum, the iliopsoas, abdominal muscle, the gluteus muscle and piriformis muscle. Since a man constantly moves, treatment using the muscles must be approached dynamically. Therefore there are ways of using the trigger point of a single muscle, as well as using the antagonistic and synergistic muscles. This is called muscle imbalance approach. And there is also chain reaction approach. These theories can give the logical basis to using acupuncture points of the abdomen and ST36 and BL40 for LBP.

4) Selection according to pattern identification

There are 10 classifications of LBP in Dongeui bogam.

- Kidney deficiency type: BL40, SI3, BL60, KI3, TE3, BL23
- Phlegm type: SI3, BL62, ST40, CV12
- Food accumulation type: LI4, PC6, ST36, GB41, SI3, BL62
- Dam-heat type: LI4, PC6, ST36, SP4, SI3, BL62

- Qi type: LI4, ST36, LR3, SI3, BL62, TE3, GB 39
- Sprain type: SI6, BL2
- Blood stasis type: SI6, BL62, KI2, SP6, LR3
- Wind type: SI3, BL62, GB41
- Cold type: SI3, BL60, ST36
- Damp type: SI3, BL62, ST36

5) Sa-Am acupuncture

Sa-Am Acupuncture (舍岩鍼法), which is one of the traditional acupuncture techniques, has been commonly applied in clinical practice in Korea. Sa-Am was a monk who lived about 400 years ago and established the Sa-Am Acupuncture Theory on the basis of the 5 Element Theory and Supplementation-Draining Theory of acupuncture together, for the treatment of Excess-Insufficient symptom and Cold-Hot symptom of diseases. The main characteristics of Sa-Am Acupuncture are taking minimum or few points with great effect, among 60 points on four extremities especially on hand and foot.

The reaction and efficacy of the treatments are very prompt and effective without any major side-effects.

The point selection of Sa-Am Acupuncture follows the principle of the flow of meridians and done according to the kind of pain. In conditions of Insufficient Kidney, Kidney meridian is selected. In cases of sprain, Gall Bladder & Bladder meridians are used, and in the existence of Blood stasis, Small Intestine meridian is treated. Lung meridian is used to resolve Damp-Heat. When a patient cannot straighten one's back, Lung or Liver meridians is selected, and in reverse case, when one cannot bend, Large Intestine meridian is used. When both flexion and extension are difficult, Kidney and Bladder meridians are used.

4. Needling method

Local points can be used for acupuncture in the treatment of LBP, but the excess and deficiency must be judged accurately to apply correct supplementation or sedation. Manipulation of needles is essential for acupuncture treatment. Methods include manually flicking, scratching, twisting, moving the needle up and down, and similar techniques. The manual stimulation of needles is varied according to individual's requirement.

Other modalities applied to acupuncture points are moxibustion, electro-acupuncture, laser acupuncture, ultrasound, and acupressure.

In moxibustion, dried leaves of the *Artemisia vulgaris*, a species of chrysanthemum, are processed

to give a similar consistency to that of cotton wool. These are placed over acupuncture points and ignited. This can produce the effect of warming Qi, promoting blood circulation for prevention of diseases as well as are preserving health. This is often done in conjunction with classical acupuncture to improve the clinical effect, particularly in conditions of weakness.

EA means that following the selection of acupuncture points, inserted needles can be coupled to the electrodes of an electroacupuncture apparatus of specific design. Electroacupuncture units are designed to deliver variable amplitudes and frequencies of electrical pulses, while their waveforms are fixed. To obtain pain relief a high intensity of stimulation, sufficient to produce muscle or muscle fiber contraction, is recommended. Frequencies of stimulation between 2 and 5 Hz are used. The large diameter sensory fibers, Ab, are effectively stimulated. 20-200Hz is used for low intensity.

Cupping is another type of treatment. This is a method of stimulating acupuncture points by applying suction through a metal, wood or glass jar, in which a partial vacuum has been created. This technique produces blood congestion at the site, and therefore stimulates it. It is also called venesection. Needles like three-edged needle, small knife or dermal needle are used to tear the shallow capillary near the skin surface to drain a small amount of blood. Cupping is used for low back pain, sprains, and soft tissue injuries.

Low-energy laser systems, called "soft lasers," are sometimes applied to acupuncture points. Laser acupuncture increases capillary permeability. It also has an application in wound healing, stimulating fibroblast production. The main indications for laser acupuncture are chronic pain conditions and skin diseases.

The Acupressure is massage applied with the fingertips to acupuncture points, chiefly to relieve acute symptoms and relax the muscles and joints.

Bee venom therapy and pharmaco-puncture for low back pain are very popular in Korea. They can be useful in pain control.

5. Needle sensation

Needle sensation or De Qi sensation is described as a feeling of soreness, swelling, heaviness and numbness experienced by the patients as the physician is needling a point. It means "Qi arrival". Clinical practice has proven a close relationship between needle sensation and acupuncture effect. The

PSM is the phenomenon of propagated sensation along the meridians when meridian points are stimulated. The meridians were mapped out in ancient times by subjective measures of needling sensation along the superficial pathways of the body. This led to diagrammatic representations of the PSM lines like traditional acupuncture charts. In many countries, the De Qi sensation and PSM have been studied for the purpose of understanding the meridian essence, increasing the therapeutic effect and explaining the mechanism of acupuncture analgesia. But the property of De Qi sensation and PSM, PSM lines, propagation rate and velocity rate may have a wide range of variability from individual to individual.

6. Duration and number of treatment sessions

The needle would be left for 15-20 minutes. It requires approximately 10 sessions of treatments and 2 to 5 sessions of treatments per week. It usually requires 3-4 sessions whether a patient is likely to respond to acupuncture and often more than this before any long-term relief is obtained, with this varying according to the condition being treated and a person's individual response to acupuncture.

Conclusion

In Korea, LBP is generally treated by acupuncture. The selection methods of acupuncture points include local points and distal points as well as various points according to the pattern identification. Also, traditional acupuncture and neuro-anatomical and functional muscle approaches are used in Korea, Traditional Korean style acupuncture, Sa-Am acupuncture is popular and recently bee venom therapy and pharmaco-puncture are under active use and clinical study.

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