

Conference Paper

Low Back Pain Therapy with Back Massage, Acupressure and Ginger Compress

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ABSTRACT

Low back pain (LBP) is defined as a sensation of pain and discomfort localized below the 12th rib and above inferior gluteal folds. In this case study, based on traditional medicine the client's LBP is due to kidney deficiency syndrome especially the kidney *Qi* and the damp-cold pathogen attack. Which is caused by bad habits, trauma, the living environment tends to be humid that can injure the kidneys, bladder which makes the kidney *Qi* weak and cause damp-cold pathogens to settle easily. The purpose is to know the effect of combination therapy for a back massage, acupressure at *Shenshu* (BL23), *Weizhong* (BL 40), *Taixi* (KI 3), and *Sanyinjiao* (SP 6) and ginger (*Zingiber officinale* Rosc.) compress on low back pain sufferers. For the methods, the clients with LBP were given massage therapy in the back and acupressure points at *Shenshu* (BL 23), *Weizhong* (BL 40), *Taixi* (KI 3), and *Sanyinjiao* (SP 6) as well as given ginger herbal compresses (*Zingiber officinale* Rosc.) 12 times within 1 week 2 times of therapy. The ginger used is red ginger as much as 20 grams each time therapy. The results of the treatment of LBP were that massage combination therapy on the back area and acupressure at the points *Shenshu* (BL 23), *Weizhong* (BL 40), *Taixi* (KI 3), and *Sanyinjiao* (SP 6) and presented a ginger herbal compress (*Zingiber officinale* Rosc.) can help with low back pain. Conclusion: Back Massage therapy, acupressure, and ginger compress could reduce low back pain.

Keywords: Back pain, back massage, acupressure, ginger compress

Introduction

Low back pain is defined as a sensation of pain and discomfort localized below the 12th rib and above inferior gluteal folds with or without persistent lower leg pain for a certain period. Low back pain can be caused by a variety of disorders. Based on etiology, low back pain can be classified into: spondylogenic, viscerogenic, vasculogenic, neurogenic and psychogenic. About 84% of cases of low back pain have no specific cause and are classified inward as non-specific low back pain (Aszar et al., 2018).

Low back pain can reduce human productivity, 50-80% of workers worldwide have experienced low back pain where almost one-third of their age have experienced some type of low back pain that is the second disease after influenza that can make a person often go to the doctor so that it has a bad impact on socio-economic conditions by reduced working days also decreased productivity (Tanderi et al., 2017). According to The Global Burden of Disease 2010 Study (2010), out of 291 the disease studied, LBP (Lower Back Pain) is the largest contributor global disability,

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as measured by years lived with disability (YLD), and was ranked sixth of the total load as a whole, which was measured with the disability-adjusted life year (DALY) (GBDB, 2010 in Arwinno, 2018). Low back pain sufferers in Indonesia are estimated at 7.6% to 37%. Complaints of low back pain often occur at the age of 20-40 years (Putri et al., 2020).

In Traditional Chinese Medicine (TCM) low back pain (*Yao Tong*) is lower back pain caused by impaired *Qi* circulation and blood on the lower back from overwork, old body and weakness, kidney deficiency, wind pathogens, trauma, and the presence of cold damp (Putri et al., 2020).

Treatment of low back pain can use pharmacological and non-pharmacological treatment. Pharmacological treatment includes NSID (Non-Steroidal Anti Inflammatory Drugs), muscle relaxants, opioids, antidepressant drugs. While non-pharmacological treatments include warm water compresses or cold, Transcutaneous electrical nerve stimulation (TENS), infrared irradiation, acupuncture, massage, and acupressure. However, some pharmacological treatments and non-pharmacological therapy have drawbacks as in pharmacological therapy namely the drug acetaminophen should not be used in clients who have a history of liver disease, fasting, and concomitant use of anti-inflammatory drugs such as NSID because it can cause liver toxicity. While the lack of non-pharmacological therapy in TENS therapy is that the device requires special skills and knowledge, so that TENS therapy can only be used by medical personnel or physiotherapy (Putri et al., 2020).

Massage is a therapy that a masseur does to help speed up the recovery process by using the touch of a hand and without entering the drug into the body that aims to relieve or reduce complaints or symptoms in several types of diseases that are an indication for massage. The goals of hand manipulation techniques (massage) include; muscle relaxation, improvement of flexibility, reduction of pain, and improvement of blood circulation (Purnomo, 2015). While acupressure is a massage technique by stimulates certain points on the body which aims to reduce aches and pains and reduce tension, fatigue, and various ailments with the intention of re-activating the circulation of vital energy and *chi* (Permatasari, 2019).

Another traditional treatment for low back pain is given a ginger herbal compress (*Zingiber officinale* Rosc.). Ginger compresses can reduce lower back pain. Ginger is efficacious as a medicine because of its pharmacological effect on ginger is having a spicy and hot taste, efficacious as an anthelmintic, antirheumatic, and preventing colds specifically, as a medicine, the heat effect of ginger is what relieves acute pain and muscle spasms the occurrence of vasodilation of blood vessels (Purnamasari & Listyarini, 2015). Besides, the effect of a warm compress can relax muscles, inhibit inflammation, gives a feeling of comfort, stimulate the release of endorphins, and inhibits the transmission of pain impulses to the brain (Margono, 2016).

Ginger in Traditional Chinese Medicine (TCM) is an herbal plant that has properties and can have a good effect on the body. Has a pungent taste and is hot or warm. It is claimed that ginger can warm the body and extremities as well as repel cold pathogens (Shahrajabian et al., 2019). So far, there hasn't been much research showing that a combination of back massage, acupressure at the points *Shenshu* (BL 23), *Weizhong* (BL 40), *Taixi* (KI 3), and *Sanyinjiao* (SP 6), and herbal ginger compress (*Zingiber officinale* Rosc.) reduce complaints of low back pain.

Material and Methods

A TCM diagnosis (observation, hearing and smelling, interrogation, palpation) is performed on the client to analyze the case. The clients with LBP were given massage therapy in the back and acupressure points at *Shenshu* (BL 23), *Weizhong* (BL 40), *Taixi* (KI 3), and *Sanyinjiao* (SP 6) as well as given ginger herbal compresses (*Zingiber officinale* Rosc.). Time of the Research: 12 times within 1 week 2 times of therapy. The ginger used is red ginger as much as 20 grams each time therapy.

Case analysis

A case study was conducted on a client who experienced low back pain by being given back and waist massage therapy, acupressure at the points *Shenshu* (BL 23), *Weizhong* (BL 40), *Taixi* (KI 3), and *Sanyinjiao* (SP 6) which were given as much as 12 times at intervals of 2 times a week. The ginger used for herbal compress therapy is red ginger as much as 20 grams each time therapy. Ginger compresses are compressed on the painful part by also using warm water.

The client is a 49 years old female, a Muslim, and a Javanese. Client status is married and has 2 children. The client is a housewife and an entrepreneur, the client lives in Sidoarjo. The client has a lethargic facial expression, droopy eyes, slightly yellowish facial color, tall, slightly fat, the client's gestures are slow, the skin is normal and light yellow, the lips look pale, the client's ears and eyes are symmetrical. The client does not use hearing aids and does not wear glasses.

Based on the observation of the tongue before therapy, it was found that the tongue muscle was pale, with a thick thickness of the tongue muscle, and looked moist. On the right and left sides there is a tooth mark. There is a fissure in the middle area of the tongue, there is a red papilla at the base of the tongue on the right. The client's tongue coating is white. Based on examination by smelling and hearing, the client's sweat does not have a strong odor. In feces not observed. Breath does not stink. The client's voice is clear. The client has the main complaint of low back pain that feels worse when the excessive activity or fatigue is made, feels better when she receives palpation on localization of pain. The client's first complaint was felt one year ago. Her complaint was that her waist felt sore after walking a little distance. The longer it feels worse until it can spread to the upper legs and knees. The client has a habit of sitting for a long time, more than four hours, then she is also often exposed to the night wind while riding a motorcycle. Based on the Numeric Rating Scale (NRS) pain scale before therapy, the client's pain scale is 6 (six) which is a moderate pain category. This makes it difficult for the client to carry out daily activities.

Additional client complaints are sometimes when the waist feels very painful radiating to the upper legs and knees, pain and stiffness in the neck and the area near the scapula. The client admits that she often has difficulty sleeping or often wakes up at night because of the pain she is experiencing and often feels restless

Based on interviews on general matters, the client likes a warm place, food that is hot or warm, salty taste. The client's bowel movements are routine, solid stools, the yellowish brown color tends to be normal, the client's urine tends to be normal, the color is clear yellow. The client has a habit of sitting for long periods of more than four hours, is often exposed to the night wind while riding a motorcycle, and the environment where the client lives tend to be humid.

In the diagnosis of special things obtained complaints in the kidney organs are lower back pain and knee legs. The client usually has trouble sleeping because of the pain. Then the presence of a syndrome disorder in the bladder is characterized by stiffness and pain in the neck area and the area near the shoulder blades which are located through the bladder meridian.

Palpation results on the *Shu* and *Mu* point are obtained as in table 1. At the *Shu* point, it can be comfortable to press (a dull soreness) on the lung, spleen, heart, kidney organs. While at *Mu* point there is no sharp pain in the spleen, heart, kidney. And on pulse examination, the palpation of *Chun*, *Guan*, *Chi* was obtained as in the table. *Yuan* point examination was also carried out to check the condition of the *Qi* in the kidney organs (*Taixi* point) with pleasantly suppressed results indicating that the kidney *Qi* was deficient.

Table 1. Palpate the *Shu* and *Mu* point

| Organ | <i>Shu</i> (sharp pain, a dull soreness, nothing) | <i>Mu</i> (sharp pain, a dull soreness, nothing) |
|-----------------|---|--|
| Lung | A dull soreness | Nothing |
| Large intestine | Nothing | Nothing |
| Spleen | Mild | Sharp pain |
| Stomach | Nothing | Nothing |
| Heart | A dull soreness | Sharp pain |
| Small intestine | Nothing | Nothing |
| Bladder | Nothing | Nothing |
| Kidney | A dull soreness | Sharp pain |
| Pericardium | Nothing | Nothing |
| Sanjiao | Nothing | Nothing |
| Gall bladder | Nothing | Nothing |
| Liver | Nothing | Nothing |

Table 2. Pulse palpation

| Pulse | Right | Left |
|-------------|------------------------------|-------------------------------|
| <i>Cun</i> | Weak/Normal/Normal (72/mnt) | Strong/Deep/Normal (74/mnt) |
| <i>Guan</i> | Weak/Deep/Normal (79/mnt) | Strong/Normal/Normal (70/mnt) |
| <i>Che</i> | Weak/Deep/Irregular (63/mnt) | Weak/Deep/Irregular (73/mnt) |

Results and Discussion

The results obtained from back massage therapy, acupressure, and herbal ginger compresses were a decrease in lower back pain. Figure 1 is a graph that shows data on changes in the total NRS score from the results of stage 1 to stage 3 therapy for back pain with a back massage, acupressure, and herbal ginger compresses 12 times.

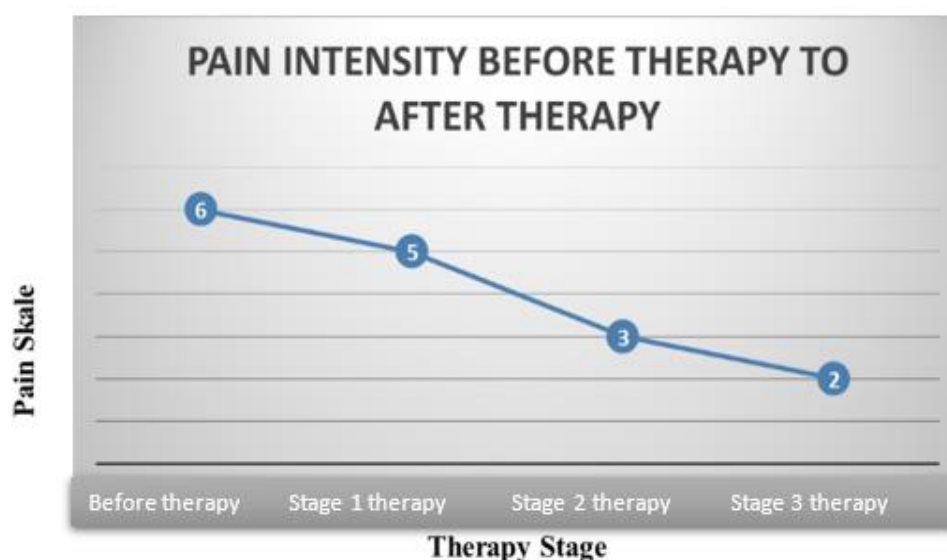


Figure 1. Graph of NRS (Numeric Rating Scale)

Table 3. Change result from additional complaint

| Therapy Stage | Additional complaint | | |
|--|----------------------|--------------------|-----------|
| | Not sleeping well | Scapular-neck pain | Knee pain |
| Before Therapy | √ | +++ (3) | +++ (3) |
| The first therapy | √ | +++ (3) | +++ (3) |
| Second therapy | √ | +++ (3) | +++ (3) |
| Third therapy | √ | +++ (3) | +++ (3) |
| Fourth therapy | √ | +++ (3) | +++ (3) |
| Final Therapy Stage 1 (2 nd Stage) | √ | ++ (2) | ++ (2) |
| Fifth therapy | | | |
| Sixth therapy | √ | ++ (2) | ++ (2) |
| Seventh therapy | - | ++ (2) | ++ (2) |
| Eight therapy | - | ++ (2) | +(1) |
| Final therapy stage 1 (3 rd stage) | - | ++ (2) | +(1) |
| Ninth therapy | | | |
| Tenth therapy | - | +(1) | - |
| Eleventh therapy | - | +(1) | - |
| Final therapy stage 3 | - | +(1) | - |
| Twelfth therapy | | | |

The decrease in pain can be seen in Figure 1. The results of the evaluation of the client's LBP using the NRS scale. The client has experienced a decrease in the level of the LBP pain scale, the pain scale before therapy was 6 (six). After the third stage of therapy becomes 2 (two). Number 6 (six) indicates that the client is in the category of moderate pain and number 2 (two) indicates that the client is in the category of mild pain.

For additional client complaints in table 3, it shows a change that is felt after therapy. Scapular-neck pain and knee pain were measured using the NRS. The pain scale for scapular-neck pain before therapy was 3 (three) then after the end of stage three therapy, it was reduced to 1 (one). While the knee pain scale before therapy was 3 (three) then after the final stage of therapy three changed to no pain complaints. And for complaints of difficulty sleeping, there are no complaints after the 7th (seventh) therapy.

Another change is that after the end of the first stage of therapy the client is no longer taking painkillers, at the end of the second stage of therapy the client experiences an improvement in her activities and becomes easier to get out of bed. Pain still recurs when the client gets around for more than 2 hours but is less painful when it recurs. Then after the third stage evaluation Client experiences improvement inactivity does not relapse frequently when getting around for more than 2 hours. Additional complaints of pain and stiffness in the scapula and neck area, have a reduced pain scale of one, and knee pain is almost non-existent. After therapy, the client's low back pain did not recur for 20 days. The client again feels pain due to exposure to cold air and overactivity.

Based on the case analysis, the client experienced low back pain with kidney deficiency syndrome, especially kidney *Qi* and damp-cold pathogen attacks. The client has a habit of sitting monotonously for more than four hours, this can injure the kidneys and bladder so that the kidney *Qi* is weak. Then, the client is often exposed to the night wind while riding a motorbike and the client's environment tends to be humid which causes her to be easily exposed to damp-cold pathogens and the client also has a history of injuries caused by motorized accidents. According to Macioca, 2015 explains that old trauma conditions are one of the factors that cause pain when it overlaps with other syndromes such as damp-cold because pathogenic factors easily settle in the injured area and cause pain. The therapeutic principle given is to warm the meridians and

expel cold for damp-cold syndrome and tonify and strengthen the kidneys for kidney deficiency syndrome (especially strengthening the kidney for kidney deficiency). The therapy given is massage on the back area and acupressure at the points *Shenshu* (BL23), *Weizhong* (BL40), *Taixi* (KI3), *Sanyinjiao* (SP 6) as given ginger herbal compresses (*Zingiber officinale* Rosc.).

Based on the results of the evaluation of the LBP suffered by the client using the NRS scale, the client experienced a decrease in the level of the LBP pain scale, the pain scale before therapy was 6 (six). After the third stage of therapy becomes 2 (two). Number 6 (six) indicates that the client is in the category of moderate pain or moderate pain and number 2 (two) indicates that the client is in the category of mild pain or mild pain (Jensen, 2011).

Cold damp pathogens can interfere with the circulation of *Qi*, *Xue*-Blood, and *Jin Ye* so that the nutrients received by the tendons, muscles, and joints are not enough. In addition, damp pathogens have the property of being easy to adhere to and descend to the bottom, causing a feeling of heaviness and pain, while cold pathogens have freezing properties, so the part affected by cold pathogens becomes stiff and sore, even to the point of not being able to move freely (Putri et al., 2020).

Massage serves to help speed up the recovery process, relieve or reduce complaints from pain. The touch of a hand on massage has benefits, namely reducing pain, producing relaxation, and increasing circulation (Putri et al., 2020). Massage on the back passes through the area of pain localization and associated meridians such as the bladder meridian. In addition, it also stimulates certain points along the bladder meridian and spinal cord line which is transmitted through large nerve fibers to the reticular formation, the natural and limbic systems of the body will release endorphins (Puspitasari & Astuti, 2017). So that by massage on the back area can reduce the intensity of low back pain.

Acupressure therapy was given at *Shenshu* (BL 23), *Weizhong* (BL 40), *Taixi* (KI 3), and *Sanyinjiao* (SP 6) points. These points have their respective uses. The *Shenshu* point (BL23) with the tonification method has uses to strengthen the kidneys and reduce low back pain. In addition, the *Shenshu* point (BL23) is the *Shu*-back point of the kidney which has benefits for nourishing the *Yang*-kidney (Yin & Liu, 2000). *Weizhong* point (BL 40) with sedation method is used to expel dampness and is the main point of low back pain, hip joint motor disorders (Jie, 2010). In addition to activating and regulating *Qi* meridians for back and lower back therapy (Ching, 2017). The *Taixi* point (KI3) with the tonification method has benefits for reducing low back pain complaints and is a kidney *Yuan* point which has benefits for strengthening kidney *Qi* (Yin & Liu, 2000). *Sanyinjiao* (SP 6) with the tonification method has the benefit of calming the *shen*, tonifying the kidneys, harmonizing the lower *jiao*, and expelling damp (Ching, 2017).



Ginger is an herbal plant that has properties that can have a good effect on the body. It has a pungent taste and is hot or warm. It is claimed that ginger can warm the body and extremities and repel cold pathogens (Shahrajabian et al., 2019). The properties of ginger can be used to repel cold and damp pathogens on the client's body. The main component of ginger is gingerol which has a hot and spicy effect that can relieve pain, stiffness, and muscle spasms. Ginger has the effect of increasing the healing process of damaged tissue and also reducing the sensation of pain (Masrurroh, 2020). The content of zingiberene also makes a sensory contribution in the form of warm, spicy, and woody (Fathona, 2011). Compress given with warm water is useful for pulling out components of chemical active ingredients contained in ginger or natural ingredients (Sitepu, 2010).

Additional complaints felt by the client before therapy such as knee pain, scapula-neck pain and difficulty sleeping due to pain. After the third stage of therapy, the client no longer feels knee pain and no longer complains of difficulty sleeping. Scapular-neck pain has also decreased. This shows that the therapy given can reduce the additional complaints felt by the client.

Before therapy, the tongue muscle looked pale, with a thick thickness of the tongue muscle and looked moist. On the right and left there are tooth mark. There is a fissure in the middle area of the tongue, there is a red papilla at the base of the tongue on the right. The client's tongue

coating is white. The white coating can be caused by cold damp pathogens in the client's body (Maciocia, 2015). A tooth mark found on the edge of the tongue indicates damp pathogens in the body (Jie, 1997). Red papillae at the base of the tongue indicate heat in the lower Jiao area (Ching, 2016). After therapy, the tongue membrane was thin and moist, the tooth mark was reduced, the tongue muscle was pink in color, indicating that the cold pathogens were no longer present and the damp pathogens were low. The client's *Qi* has also started to return to normal (Table 4).

Table 4. The condition of the client's tongue before and after therapy

| Stage | Tongue Image | Description |
|----------------|--|---|
| Before therapy |  | The tongue muscle looks pale, with the thickness of the tongue muscle thick and looks moist. On the right and left there is a tooth mark. There is a fissure in the middle area of the tongue, there is a red papilla at the base of the tongue on the right. The client's tongue coating is white. |
| After therapy |  | After therapy, the tongue coating was thin and moist, the tooth mark was reduced, the tongue muscle was pink in color, indicating that the cold pathogens were no longer present and the damp pathogens were low. The client's <i>Qi</i> has also returned to normal. |

Conclusion

Case studies conducted on the handling of cases of low back pain can be concluded that the combination therapy massage in the back area and acupressure with tonification techniques at the points *Shenshu* (BL 23), *Taixi* (KI 3), and *Sanyinjiao* (SP 6) and Sedation techniques at the *Weizhong* point (BL 40), as well as giving ginger herbal compresses (*Zingiber officinale* Rosc.) as much as 20 grams per therapy for 12 times can help overcome low back pain. The client feels more comfortable and the pain is reduced. Marked by the NRS pain scale before therapy is 6 (six). After therapy, the client's pain is reduced to 2 (two) which indicates mild pain.

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