# 13 - ACUPUNCTURE LOCAL AND DISTAL FOR TREATMENT OF LOW BACK PAIN

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**Introduction**

Pain in the lumbar spine, so called low back pain (LBP), is very common and affects a large proportion of the population. In Brazil there are no statistics about the back pain and its consequences, but according to the World Health organization (WHO), more than 80% of the people are affected at some point in their lives and the LBP is the most common spinal disorder.

This disease has a major impact socioeconomic, because many people affected by pain in the spine remain away from work or their productivity is reduced due to the pain. It occurs even reduction in the quality of life and the individual becomes unable for the conduct of its activities.

The LBP is not a disease, but a symptom caused by one or more diseases of the spinal column. The growing number of diseases of the spine, especially lumbar spine, is linked to lifestyle, witch goes much of time in the sitting position, and the maintenance of this position in a inadequate form is frequent. Other factors, according Mercurio (1997) e Grieve (1994), consist of up right position (by overloading the intervertebral discs), weakness of muscles of the spine, trauma, over-weight, aging and prolonged or repetitive loads focusing on the spine.

The use of alternative medicine, including acupuncture, has increased annually. In the United Kingdon 35% of the patients with LBP are treated with alternative therapies (Quinn; Hudghes; Baxter, 2006). There are no Brazilian statistics by acupuncture treatments for symptoms related to the spine, but it is kwon by the clinical practice, that the use of this modality of treatment increases each year.

Haake and colleagues (2003) reported that the scientific literature relating to the treatment of LBP through acupuncture is still poor, particularly by the diversity of methodologies.

There are many ways and point for the treatment of LBP by acupuncture, among these methods the use of acupuncture needles in the local of the pain and in distant points, but situated in the energy meridians pass at the local affected. We kwon that with the insertions of needles are stimulated nerve fibers and chemical substances are released, this mechanism reduces the painful process and treats diseases.

As Maciocia (1996), distal points are used in acute cases and local points in chronic LBP. But no one knows exactly the difference between treatment with local points and distal points, it is known by the clinical practice that both rave positive results.

**Objective**

Determine and compare the action of acupuncture in the treatment of voluntaries with low back pain by using local and distal acupuncture points in the reduction of pain, though visual analog scale and testes of Lasègue e Schober.

**Metodology**

This research was experimental in nature. For the selection of points of acupuncture, there was a review of the scientific literature and among the points of acupuncture reported and used for the treatment of low back pain, were selected two, one distal and local.

The research complies with the resolution 196/96 and the project was approved by the Committee on Ethics and Research.

The participants were selected from a list of voluntaries of the clinic, from a school of Acupuncture of the city of Curitiba and were contacted by telephone. Twelve volunteers accepted to participate in the study. The factors of exclusion consisted of: disease with change of tactile sensitivity, smoking, high blood pressure or higher than 140X90mmHg on the day of collection of data and individuals who do not sign the term of free and informed consent. None of the participants had taken painkillers at least one week before the evaluation.

The study used as a procedure for the evaluation and reevaluation a scale visual analogue (VAS) and the following tests orthopedic: Lasègue and Schober, these tests are described in the literature and are used in clinical practice of physiotherapist and acupunturist for evaluation of patients with diagnosis of LBP. In the VAS the voluntary marked on a line with 10 cm in length where she realize that was the intensity of their pain. In the beginning of this line was informed the value corresponding to the zero pain (minimum intensity) and the intensity in the final was ten, or maximum pain. It measured the distance between zero and the site marked, and returned to the intensity of pain.

The Lasègue test was conducted with the participant in supine position with the lower limbs extended. The researcher gradually extended one of the lower limbs of voluntary and asked that she inform the moment that feel pain at this time was measured the angle of flexion of the hip, with a goniometry Brand ISP. The test was conducted bilaterally and if the participant does not feel pain the test was considered negative.

According to Barros Filho and Lech (2001), the onset of symptoms in a angulation between 60 to 80 ° of flexion of the hip articulation indicates compression of nerve roots L5, S1 and S2, which form the sciatic nerve.

The Schober test was conducted with the voluntary position in orthostatic position. The spinal process of the fifth lumbar vertebra (L5) has been located and were demarcated with a tape measure (mark ISP) 15 cm, 10 cm above and 5 cm below L5. Then was asked that the voluntary done a maximum bending of femoral articulation of than the distance between the points was scored. The test was considered positive if the distance measured not increase at least 6cm.

Then the evaluation, was held a session of acupuncture treatment and the selection of local and distal was so random.

For the local treatment was used to point B23, which, according to Chen (1997), is located to 1.5 inch lateral line average posterior, lateral and below the spinal process of the second lumbar vertebrae. And for the distal treatment was used to point B60, located at the midpoint between the margin back of the apex side of the fibula and the region above the tendon of the calcaneus, the level of the highest point of the apex lateral (Chen, 1996).

The maneuver was performed sedation, in which, according Auteroche and Auteroche (1996), every 5 minutes for the needle acupuncture was round in a range of $180^0$ to $360^0$, and were made 06 moves in this range. The the total time the needle was 15 minutes.

**Results**

In response to evaluation of pain, after the end of treatment the participants of the local group and distal showed reduction

of pain, but the reduction was greater in the group that received treatment locally. In table 1 can be viewed average reduction of pain.

The values for the reduction of pain accounted for 72% in the local treatment and 57% in the treatment distal (figure 1).

TABLE 1 - Reduction of pain after local and distal acupuncture

| | *Pain* | |
|---|---|---|
| Treatment | Initial | Final |
| Local | 5,58 | 1,58 |
| Distal | 5,33 | 2,28 |

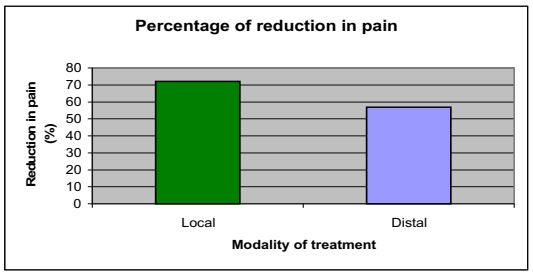


FIGURE 1 - Percentage of reduction of pain after acupuncture

In Laségue test, after the acupuncture, voluntaries who had positive test at the beginning of treatment, showed improvement both in local and in distal treatment (table 2).

TABLE 2 - Percentage of improve in Lasègue test

| *Treatment* | *Positive (initial)* | *Negative (final)* | *Negative (initial/final)* | *Improves (%)** |
|---|---|---|---|---|
| Local | 4 | 4 | 2 | 100 |
| Distal | 4 | 4 | 2 | 100 |

* To calculate the percentage of improvement were considered only those voluntaries in the test was considered positive.

In Schober test, in the evaluation all participants had positive test, although there has been improvement in both treatments, the test was still positive revaluation. In table 3, is described the measure found in flexion maximum of articulation femoral lame.

In this test, the distance between the points scored in the spine, as described in the methodology, should increase to 21cm.

TABLE 3 - Improve in the Schober test

| *Treatment* | *Initial* | *Final* | *Improves (%)* |
|---|---|---|---|
| Local | 20,5 | 20,8 | 1,46 |
| Distal | 20,5 | 20,6 | 0,48 |

**Discussion**

The reduction of pain seen with the implementation of the scale of pain indicates that acupuncture is an effective method in reducing the pain, in this case LBP. The evaluation of pain is criticized in the literature since its evaluation is subjective, but this poll the reduction of pain was confirmed through the application of orthopedic tests, especially the Laségue test, which was resolved in all participants.

Haake and collaborators (2003) report that lack scientific literature attesting to the effectiveness of acupuncture in the treatment of LBP, this is due to methodological problems, as there are many factors that cause LBP and there are many ways of treatment. The current literature is not sufficient to confirm or exclude the effectiveness of acupuncture in the treatment of LBP.

Furthermore, these researchers, conducted a study in which 1,062 patients were evaluated and, of the patients treated with acupuncture, 60% showed improvement, whereas only 50% of patients who have made conservative treatment showed improvement. In this research the points of acupuncture B23, B40 and B60 were obligatory, and other optional items could be used.

The effectiveness of acupuncture was analyzed and described by other researchers. In studies of van Tulder, Furlan, Gagnier (2005) the treatment of low back pain conducted through acupuncture was more effective than the placebo in relation to the non achievement of treatment. These researchers report that the results of acupuncture are better when this technique is performed in conjunction with other therapies (osteopathic, massage, TENS and medicines).

Tsukayam and colleagues conducted a survey comparing analgesia by eletroacupuntura and TENS. The results found showed that acupuncture was more effective in reducing the pain. In this case, were used only local points, which consist of point B23 and B26.

Molsberger and collaborators (2002), Leibing and collaborators (2002) and Kennedy and collaborators (2007) studied using the placebo group for comparison of the results obtained with acupuncture. In the three researches the acupuncture produced better results when compared to the placebo group. In these searches, among other points, were used the points of acupuncture B23 and B60.

Yeung, Chow and Leung (2003), observed that the eletroacupuntura held in conjunction with exercises was better than the use of exercises only. In this study we used the points B23 and B60 linked to other points of acupuncture.

The studies described concurrently use the points of acupuncture B23 and B60, or perform treatment with local and distal points at the same time. Do not found, so far, scientific studies comparing the results of treatment with local to distal points. Only Macciocia (1996) reports the use of local and distal points in acute and chronic pain, respectively, but he does not describe researches and percentage proving that assertion.

Given to the difference of methodologies, it is difficult to establish a standard comparison of the results of acupuncture held in place and held in distal areas.

From the analysis of the scale of pain, it can be observed that the treatment was more effective local, as presented pain reduction of 72% in this modality of treatment.

As van Tulder, Furlan, Gagnier (2005) the action of acupuncture in reducing the pain may be related to the mechanism of the gate of pain. In which the sensory stimulus of pain can be inhibited in the central nervous system by another kind of stimulus, in this case, the needle of acupuncture.

The reduction in pain, according Yamamura (2001), is also linked to the release of neurotransmitters such as substance P, prostaglandins, histamine and the stimulation of the delta fibers and C.

The largest reduction in pain at the treatment site may be related to greater relaxation of paravertebral muscles, but to

confirm this hypothesis is necessary electromyographic study.

The local treatment has also been more effective in the improvement of Schober test, which, although still below the expected value, presented improves. In this mode of treatment the average value found in the revaluation was near the expected value (21cm).

Molsberger and colleagues (2002) also not found in their studies, differences in test Schober and suggest that acupuncture is a treatment for pain, not having effects on functional movements of the body.

Regarding the Lasègue test, the reduction in symptoms making the test negative can be linked to the relaxation of paravertebral muscles, with consequent reduction of pain, compression in the intervertebral discs and nerve compression.

Suggestions are made as new studies to investigate the analgesic treatment in distal and local sites and the use of eletroacupuncture, auriculotherapy and, for confirmation of the assessment results by electromyography.

**Conclusion**

In the present study it was observed that the voluntaries that received treatment of acupuncture with local points had higher reduction in pain compared to the voluntary treated with distal points. Although the reduction of pain has been greater in the local treatment, it can not be said that treatment using points away from the place of pain is ineffective, since there were positive results, but on a smaller scale.

Reducing the pain was attributed to muscle relaxation, release of substances antiinflammatory, such as substance P, histamine and prostaglandins, and stimulation of nerve fibers A-delta and C. The stimulation of nerve fibers serves on the mechanism of the gates of pain, in which the sensory stimulus promoted by the acupuncture needle insertion and manipulation competes with the painful stimulus, promoting the closure of the gate to the painful stimulus.

The reduction of pain broke the cycle pain-spasm-pain, also produces changes in orthopedic tests. As the evaluation of pain is subjective and subject to psychological interference, changes in the test orthopedic confirm the positive results of treatment of acupuncture to reduce back pain, and have thus data goals and probative of the effectiveness of treatment through acupuncture.

It was found that the test of Laségue presented similar decline in the two modalities of treatment. This indicates that there was decompression of the nerve roots of L5, S1 and S2. The decompression of the nerve roots probably occurred as a result of muscle relaxation and reduction of pain.

For the Schober test, though there have been improvements, it remained positive. This indicates that despite occurring muscle relaxation, this was not sufficient to promote improvement in the mobility of the spine. The result of this test was better at the local treatment when compared to treatment distal, this outcome was similar to the reduction of pain.

These results, verify the effectiveness of acupuncture, indicate that there is improvement in the quality of life of individuals, which may hold their daily activities more effectively, beyond the psychological benefits and the feeling of well being promoted by the reduction of pain.

There are also socioeconomic benefits, related to the reduction of costs for businesses and social welfare, as a result of the increase in productivity and reduction in the number of employees away from work for pain in the spine.

It can be concluded that the local treatment was better than the distal treatment and distal was no reduction in pain and resolution of the test maneuver in both forms of treatment. These results if not probative are highly suggestive of the effectiveness of acupuncture in the treatment of LBP and add knowledge to the existing literature promoting greater knowledge of a technical millenary that brings many health benefits.

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**ACUPUNCTURE LOCAL AND DISTAL FOR TREATMENT OF LOW BACK PAIN**
**ABSTRACT:**

According to the World Health Organization (WHO) more than 80% of people feel back pain at some point in their lives. This disease represents a major socioeconomic problem, disabling individuals for the conduct of its activities. The acupuncture promotes reduction of back pain, but its results are still controversial because of the many possibilities for treatment. This study was aimed at comparing the action of acupuncture in the treatment of patients with low back pain by using proximal and distal points in the reduction of pain, through visual analog scale and orthopedic tests of Lasègue and Schober. Twelve volunteers took part of the study and they were divided into two groups with equal numbers of participants. In the group of local treatment, the point B23 was used bilaterally and in the group that received treatment distal the point B60 was used bilateraly. The needles were maintained for 15 minutes and maneuvers of sedation was performed every 5 minutes. The local group of volunteers showed greater reduction in pain and improvement in test Schober, though it remained positive. The test Laségue results presented noticed similar in the two groups and has been fully resolved. We could conclude that the local treatment produced better results than the distal one, but there was reduction of pain and resolution of the Laségue test in both forms of treatment. These results if not probative are highly suggestive of the effectiveness of acupuncture in the treatment of back pain and add knowledge to the existing literature promoting greater knowledge of a technical millenary and that brings many health benefits.

KEYWORDS: acupuncture, low back pain, spinal cord.

**L'ACUPUNCTURE LOCAL ET DISTAL POUR LE TRAITEMENT DES DOULEUR LOMBAIRE**
**RESUMÉ:**

Selon l'Organisation mondiale de la santé (OMS), plus de 80% des gens se sentent douleurs dorsales à un certain point dans leur vie. Cette maladie représente l'un des principaux problèmes socio-économiques, la désactivation des particuliers pour la conduite de ses activités. L'acupuncture, favorise la réduction des douleurs dorsales, mais ses résultats sont encore controversés en raison des nombreuses possibilités de traitement. Cette étude visait à comparer l'action de l'acupuncture dans le traitement des patients atteints de lombalgie en utilisant proximale points et distale dans la réduction de la douleur, par l'intermédiaire de l'échelle analogique visuelle et orthopédiques essais de Lasègue et Schober. Une partie de l'étude, 12 volontaires divisés en deux groupes avec un nombre égal de participants. Dans le groupe de traitement local, le point a été punturado B23 au niveau bilatéral et dans le groupe ayant reçu le traitement distale punturado bilatéral a été le point B60. Les aiguilles ont été maintenus pendant 15 minutes et les manœuvres de sédation a été effectué toutes les 5 minutes. Le groupe local de bénévoles montrait une plus grande réduction de la douleur et de l'amélioration de la méthode d'essai Schober, même si elle est restée positive. Les résultats Laségue remarqué similaire dans les deux groupes et a été entièrement résolus. Avant cela, on peut conclure que le traitement local de meilleurs résultats au détriment de la partie distale de traitement, mais il ya eu réduction de la douleur et de la résolution de Laségue dans les deux formes de traitement. Ces résultats ne sont pas très révélatrices probante de l'efficacité de l'acupuncture dans le traitement de la douleur au dos et ajouter à la connaissance de la littérature existante promouvoir une plus grande connaissance d'une technique millénaire et qui apporte de nombreux avantages pour la santé.

MOTS CLÉS: l'acupuncture, les douleurs lombaires, la moelle épinière.

**ACUPUNTURA DISTAL Y LOCAL PARA EL TRATAMIENTO DE LUMBALGIA**
**RESUMEN:**

Según la Organización Mundial de la Salud (OMS), más del 80% de las personas que sienten el dolor de espalda en algún momento de sus vidas. Esta enfermedad representa un importante problema socioeconómico, de inhabilitación para la realización de sus actividades. La acupuntura promueve la reducción de dolor de espalda, pero sus resultados son aún controvertidos, debido a las numerosas posibilidades de tratamiento. Este estudio tuvo por objeto comparar la acción de la acupuntura en el tratamiento de pacientes con dolor lumbar con puntos proximal y distal en la reducción del dolor, a través de la escala analógica visual y ortopédico de las pruebas de Lasègue y Schober. Parte del estudio de 12 voluntarios divididos en dos grupos con igual número de participantes. En el grupo de tratamiento local, el punto fue punturado B23 bilateral y en el grupo que recibió tratamiento distales punturado bilateral fue el punto B60. Las agujas se mantuvieron durante 15 minutos y las maniobras de sedación se realiza cada 5 minutos. El grupo local de los voluntarios mostraron una mayor reducción del dolor y una mejora en el ensayo Schober, aunque siguió siendo positiva. Los resultados de las pruebas presentadas notado similar en los dos grupos y que ha sido totalmente resuelto. Antes de esto se puede concluir que el tratamiento local produjo mejores resultados que lo distal, pero hubo una reducción del dolor y la resolución de la prueba de maniobra de Laségue en ambas formas de tratamiento. Estos resultados no son probatorio pero son altamente indicativos de la eficacia de la acupuntura en el tratamiento del dolor de espalda y añadir conocimiento a la literatura existente promover un mayor conocimiento de una técnica milenaria y que aporta muchos beneficios para la salud.

PALABRAS CLAVE: acupuntura, lumbalgia, la médula espinal.

**ACUPUNTURA LOCAL E DISTAL PARA TRATAMENTO DE LOMBALGIA**
**RESUMO:**

Segundo a Organização Mundial da Saúde (OMS) mais de 80% das pessoas sentirão dor lombar em algum momento de suas vidas. Esta patologia representa um problema socioeconômico importante, incapacitando os indivíduos para a realização de suas atividades. A acupuntura promove redução da dor lombar, porém seus resultados ainda são controversos em virtude das inúmeras possibilidades de tratamento. Este estudo teve por objetivo comparar a ação da acupuntura no tratamento de pacientes com lombalgia, utilizando pontos proximais e distais na redução da dor, por meio de escala visual analógica e testes ortopédicos de Lasègue e Schober. Participaram do estudo doze voluntárias divididas em dois grupos com igual número de participantes. No grupo de tratamento local, foi punturado o ponto B23 bilateralmente e no grupo que recebeu tratamento distal foi punturado bilateralmente o ponto B60. As agulhas foram mantidas por 15 minutos e manobras de sedação foram realizadas a cada 5 minutos. As voluntárias do grupo local apresentaram maior redução da dor e melhora no teste de Schober, embora este continuou positivo. O teste de Lasègue apresentou resultado similar nos dois grupos e foi totalmente solucionado. Diante disto pode-se concluir que o tratamento local apresentou melhores resultados em detrimento do tratamento distal, porém houve redução da dor e resolução do teste de Lasègue em ambas formas de tratamento. Estes resultados se não comprobatórios são altamente sugestivos da efetividade da acupuntura no tratamento da dor lombar e agregam conhecimento à literatura existente promovendo maior conhecimento a uma técnica milenar e que traz muitos benefícios à saúde.

PALAVRAS CHAVE: acupuntura, lombalgia, coluna vertebral.