

Efectividad de la electroacupuntura en la lumbociatalgia pain según el diagnóstico tradicional

Effectiveness of electroacupuncture in lumbosciatic pain according to traditional diagnosis

Honay Orta-Arias; Mercedes Suárez-Sandoval; Cecilia Despaigne-Pérez

Policlínico Raúl Sánchez, Pinar del Río, Cuba
Universidad Hermanos Saíz Monte de Oca, Pinar del Río, Cuba
Universidad de Guantánamo, Cuba

Correo(s) electrónico(s)

honayortaarias@gmail.com
mercedessuarezsandoval@gmail.com
ceciliadp@infomed.sld.cu

ORCID: <https://orcid.org/0000-0002-8113-9682>
<https://orcid.org/0000-0002-3334-7452>
<https://orcid.org/0000-0002-8991-070X>

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Resumen

La Medicina Tradicional China, proceder diagnóstico y terapéutico utilizado hace años con resultados satisfactorios en el diagnóstico y tratamiento de enfermedades. El dolor lumbar, problema de salud en adultos, con alta prevalencia, principal causa de consulta, ausentismo laboral y discapacidad. El objetivo es evaluar la efectividad del electro acupuntura en la lumbociatalgia según diagnóstico tradicional, de marzo 2022 a julio 2023. Se realizó estudio descriptivo, prospectivo y longitudinal. Métodos de análisis síntesis, histórico lógico; empíricos: observación, encuesta y estadísticos. Los grupos etáreos más frecuentes fueron de 60 años y más y 50-59, predominando el sexo masculino, el síndrome tradicional frecuente, estancamiento del Qi de Hígado, la deficiencia de yang de Riñón, con buena evolución clínica. Ningún paciente presentó dolor severo y más de la mitad tuvo dolor leve. Refirieron alivio del dolor en la quinta sesión, la reacción adversa más común fue el dolor intenso en el sitio de punción.

Palabras clave: Lumbosciatic pain; Electroacupuntura; Diagnóstico tradicional; Medicina natural tradicional.

Summary

Traditional Chinese Medicine, a diagnostic and therapeutic procedure used for years with satisfactory results in the diagnosis and treatment of diseases. Low back pain: a health problem in adults, with high

prevalence, main cause of consultation, work absenteeism and disability. The objective is to evaluate the effectiveness of electro acupuncture in Lumbosciatic pain according to traditional diagnosis, from March 2022 to July 2023. A descriptive, prospective and longitudinal study was performed. Methods of analysis: synthesis, historical-logical; empirical: observation, survey and statistics. The most frequent age groups were 60 years and older and 50-59, predominantly male, the most frequent traditional syndrome, Liver Qi stagnation, Kidney yang deficiency, with good clinical evolution. No patient presented severe pain and more than half had mild pain. They reported pain relief in the fifth session; the most common adverse reaction was severe pain at the puncture site.

Keywords: Lumbosciatic pain; Electroacupuncture; Traditional diagnosis; Traditional natural medicine.

Introduction

Natural and Traditional Medicine (TNM) has experienced a remarkable resurgence worldwide in recent decades, driven by a growing demand for more holistic and less invasive treatments. This medical approach, which encompasses a variety of practices such as herbalism, acupuncture, electroacupuncture, acupressure, acupressure, homeopathy and Ayurvedic medicine, is based on the use of natural remedies and ancient techniques to promote health and wellness. In many countries, MNT has been integrated into public health systems, recognized for its ability to complement modern medicine, especially in the management of chronic diseases and prevention of conditions.

In addition, the World Health Organization (WHO) has actively supported the integration of NTM into national health programs, recognizing its value in primary health care and its accessibility to rural and underserved communities.

Despite challenges related to regulation and standardization, MNT continues to gain acceptance and popularity, reflecting a global movement toward more sustainable and culturally relevant approaches to health.

After the triumph of the Revolution in 1959, Cuba experienced a significant transformation in its healthcare system, where MNT began to play a decisive role. Faced with the need to guarantee comprehensive medical care, the Cuban government promoted research and the use of natural and traditional treatments. MNT was officially integrated into the Cuban health system, promoting practices such as acupuncture, electro-acupuncture, phytotherapy and homeopathic medicine. Academic and research institutions, such as the "Pedro Kourí" Institute of Tropical Medicine, devoted considerable efforts to the study and development of NTM. Cuba's approach to NTM not only allowed an efficient response to economic limitations, but also promoted a model of preventive and community health care,

positioning itself as a reference in the successful integration of traditional medicine into a modern and accessible health system.

Many researchers have been dedicated to the study and development of MNT, highlighting several contributions over time. Pascual, Cuello and Gómez (2023), referred to the three fundamental pillars of MNT: Acupuncture and related techniques (electro acupuncture), Moxibustion and the use of pharmacological properties of plants, animals and minerals.

These pillars not only represent essential therapeutic techniques, but also integrate a holistic approach to health care, where the interaction between body, mind and environment is fundamental to the well-being of the individual.

Electro acupuncture and techniques derived from traditional Chinese medicine have proven to be effective in relieving low back pain and improving various health conditions, while the use of natural substances continues to be an area of intense research due to their therapeutic potential and accessibility.

In another study, Alvarez, Tosar, and Echemendía (2017), focused on the root causes of low back pain, a prevalent condition in the global population. Their research highlighted the importance of approaching low back pain from a multidimensional perspective, considering physical, emotional and environmental factors. Understanding the causes of low back pain allows for the development of more effective and personalized treatments, which may include electroacupuncture.

The integration of modern knowledge with traditional practices offers a comprehensive approach to a condition that affects the quality of life of many people.

Numerous Cuban researchers have made valuable contributions to the study and development of MNT, such as (Mastellari, 1996), who highlighted the importance of syndromes identification, based on the theory of Zang Fu organs, as a central element in traditional Chinese medicine. This theory, which encompasses the function and relationship of the internal organs, is essential for the diagnosis and treatment of various health conditions in NTM.

On the other hand, (González, 2020), investigated the high incidence and prevalence rates of low back pain in the Cuban population. His work underscores the need to address this condition in a comprehensive manner, considering both traditional and modern approaches, to improve the quality of life of those affected. This research reflects the commitment of Cuban scientists to integrate and advance MNT, providing effective and accessible solutions for public health.

However, in these investigations there are insufficiencies in the effective treatment of electroacupuncture in patients with low back pain in the Cuba Libre Popular Council, belonging to the Raul Sanchez Polyclinic of Pinar del Rio, given in:

- Insufficient use of traditional diagnosis.
- The effectiveness of electroacupuncture for the effective treatment of low back pain is not taken into account.
- In many cases, a syndromic differentiation is not established and the specific diagnosis is not determined, therefore the cause is not treated.

That is why the idea to be defended is presented in the following terms: If electroacupuncture treatment based on the traditional diagnosis is applied to patients with Lumbosciatic pain, the cause is treated, the pain and its accompanying symptoms are reduced in a shorter period of time, with a minimum of adverse reactions, due to its analgesic, anti-inflammatory and functional impotence reduction effect, thus improving the quality of life of the individual, the family and society in general.

The objective of this research is to evaluate the effectiveness of Electroacupuncture in the treatment of Lumbosciatic pain according to traditional diagnosis by Zang Fu Organs in patients of the Cuba Libre Popular Council belonging to the Raul Sanchez Polyclinic of Pinar Del Rio Municipality.

Development

Effectiveness of electroacupuncture in Lumbosciatic pain according to traditional diagnosis

The main theoretical bases of MNT were contributed by the Chinese materialist philosopher Lao Tse (1972), who established fundamental concepts such as the theory of Yin Yang, the theory of the five elements, and the theories of the organs Zang Fu (internal organs), Qi (energy), Xue (blood), Jingye (body fluids) and the theory of channels and collaterals.

The Yin Yang theory describes the duality inherent in nature and in the human body, while the five element theory provides a framework for understanding the interactions between the different systems of the body. These theories have been the basis for therapeutic practices that seek to balance the body's energies to maintain health and prevent disease. The understanding and application of these theoretical principles have been instrumental in the development and practice of MNT throughout the world.

The identification of syndromes according to the Zang Fu organs consists of performing the analysis and classification of the syndromes taking into account the physiological functions of the organs, such as the kidney and the pathological manifestations; in this way it is possible to identify the pathology in question, its location, characteristics, the state of ZhengQi and XieQi.

According to Alvarez, Tosar and Echemendía (2017), from TCM, low back pain or pain in the lower back can have as etiology causes fundamentally as excessive physical work, either in their work, sports or exercises; excessive lifting of heavy objects that weakens the back in two ways; in a purely physical way, which strains the muscles of the lower back, and in an energetic way, Kidney Qi is weakened.

These authors further state that excessive sexual activity in men weakens the back in an energetic sense, as it depletes Kidney Qi, and its deficiency leads to a failure to nourish and strengthen the back muscles.

For his part, Hernan (2019), states that the cause, pathogenesis, location and symptoms are different, therefore, the treatment will also be different.

Interrogation, observation, examination of the pulse, the tongue and the areas where the meridians run allow examining the patient and exploring not only verbally, but also the effects that the disease produces in their emotional and relational life. This creates an enriching context for the consultant and the therapist, facilitating an accurate diagnosis and, therefore, an appropriate therapy. In addition, there is the possibility of connecting the needles to electrical stimulation equipment, modifying the frequency and amplitude of the current applied.

The Dian Zhen Fa or Dian ZhenLiao Fa method of electro acupuncture, according to Delgado (2013), is considered one of the modalities of modern acupuncture. It began as another method of needle stimulation and has become a therapeutic procedure, its introduction in the country since 1989, with the KWD 808-II technology, has been generalized throughout the national health system, obtaining excellent results. This technique is used both in outpatient and inpatient care, as well as in acupuncture surgical analgesia procedures.

We assume the definition of electro acupuncture given by Cobos (2013), who describes it as a "therapeutic technique that applies the use of electrotherapy to inserted acupuncture needles" (p. 269). The combination of these two therapeutic modalities creates a synergy that offers certain advantages over traditional acupuncture, as it allows reinforcing the stimulation of acupuncture points and meridians, producing an analgesic effect.

From the clinical point of view, for Mu, Furlan, Lam, Hsu, Ning, & Lao (2020), this method is very useful to treat diseases with pain, such as epilepsy, flaccid syndrome (Wei syndrome), neurasthenia, hypertension, as well as to induce anesthesia by means of acupuncture.

According to Méndez et al. (2019), low back pain is pain or discomfort in the lumbar area, located between the lower edge of the last ribs and the lower fold of the buttocks area, pain that can radiate to one or both legs and involves osteomuscular and ligament structures, with or without functional limitation, hindering daily activities and may cause absenteeism.

Low back pain is one of the most frequent health problems in adults, with a lifetime prevalence of around 80%. It is one of the most common painful conditions and the main cause of medical consultation, leading to a series of comorbidities that significantly affect quality of life. These include

depression, sleep disorders, immunosuppression and lack of socialization. In addition, it is the main cause of work absenteeism and disability, generating enormous secondary costs.

In Cuba, low back pain behaves similarly to other countries, affecting 80% of the working age population and constitutes the second cause of pain.

In Pinar del Río province, as in the rest of the country, experts agree that low back pain is a morbid process that affects the population in general. For this reason, efforts are made to improve the rehabilitation and social reincorporation of patients, and numerous studies have been carried out that apply traditional recipes for the treatment of sacral lumbago. Although these treatments are mostly based on Western diagnoses and have shown encouraging results, in many cases a syndromic differentiation is not established nor is a specific diagnosis determined.

Therefore, the underlying cause is not treated; instead, a formula is applied that includes acupuncture points of general action without considering the specific needs of each patient. This leads to treating the painful symptom rather than the cause of the pain, which in most cases leads to recurrence of the condition and recurrence of attacks.

The importance of this study lies in the fact that it will provide valuable information for the health sciences, specifically in relation to the treatment of Lumbosciatic pain. In addition, it will have a significant social and economic impact by contributing to savings in health service costs and reducing absenteeism from work caused by this disease.

In 2023, 413 patients with a diagnosis of Lumbosciatic pain were seen at the Physical Medicine and Rehabilitation Clinic of the Raúl Sánchez Community Polyclinic.

The universe was constituted by 399 relatives who attended the Physiatry and MNT services, aged between 20 and 60 years or more. The sample consisted of 63 patients who met the inclusion criteria.

The use of electroacupuncture is often an effective treatment; however, its application is usually directed only to pain relief, without addressing the underlying cause in these patients. Furthermore, in Cuba there is still a lack of studies that prove the effectiveness of this therapeutic modality based on traditional diagnosis. Lumbosciatic pain is a common cause of consultation in the Natural and Traditional Medicine (NTM) service of the Raúl Sánchez Polyclinic, in the municipality of Pinar del Río.

In order to achieve the proposed objective, several methods and techniques were selected, developed and applied, based on the syndromes differentiation method chosen for this study. The sample was constituted by 63 patients who fulfilled the inclusion criteria, previous informed consent.

Scientific research methods

Theoretical methods: A documentary analysis of the bibliography consulted was carried out, including results of complementary research and reference texts relevant to the object of study, as well as the individual clinical histories developed during the research.

Historical-logical analysis method: It was used to deepen in the antecedents, risk factors and clinical forms of presentation of the disease.

The synthesis analysis method was used both in the consultation of the bibliography and in the review of texts, brochures and specialized journals, and in the processing of primary data.

Empirical methods

Interview: A structured interview was conducted with the patients in the study, in which the answers obtained played a fundamental role in identifying the general characteristics of the patients and the behavior of the disease.

Observation: Systematic observation was carried out to verify the progress of the work, the behavior of the clinical and epidemiological aspects, as well as the incidences in the therapeutic orientation process.

Statistical Methods

Descriptive statistical methods: all data were recorded in a database created in Excel to guarantee their reliability and facilitate the creation of dynamic tables for their processing. The data were analyzed using the SPSS statistical system, taking into account the levels of measurement of the variables and applying appropriate statistical methods. The results were presented in the form of tables and graphs.

Percentage was used as a summary measure for quantitative and qualitative variables. To determine the level of statistical significance of the association between variables, Pearson's Chi-square was used with a confidence level of 95 % ($P < 0.05$).

Table 1 Evaluation of the variable, dimensions and indicators

Variable	Se clasifica	Se describe	Operacionalización	Indicador a utilizar
Edad	Cuantitativa discreta	20-29 años; 30-39 años; 40-49 años; 50-59 años; 60 y más años	Años cumplidos según carné de identidad	Distribución de frecuencias absolutas y relativas
Sexo	Cualitativa nominal dicotómica	Masculino Femenino	Categoría sexual Genética	Distribución de frecuencias absolutas y relativas

Diagnóstico tradicional	Cualitativa nominal politómica	Insuficiencia 1. Insuficiencia de Yin de Riñón 2. Insuficiencia de Yang de Riñón 3. Qi de Riñón no firme 4. Insuficiencia de Yang de Bazo y de Riñón Exceso 5. Estancamiento del Qi de Hígado	Diagnóstico según síntomas referidos y signos al examen físico tradicional	Distribución de frecuencias absolutas y relativas
Intensidad del Dolor	Cualitativa Nominal politómica	Leve	Si el paciente puntúa el dolor en 2 o 3.	Distribución de frecuencias absolutas y relativas
		Moderado	Si la valoración se sitúa en 4, 5, 6 o 7.	
		Severo	Si la valoración es igual o superior a 8,9 o hasta 10	
Número de aplicaciones necesarias para lograr alivio del dolor	Cuantitativa discreta	1 a la 5 Aplicaciones 6 a la 10 Aplicaciones	Según número de aplicaciones de tratamiento	Frecuencia absoluta
Evolución clínica	Cualitativa Nominal Politómica	Buena	Cuando el paciente puntúa el dolor en 1, 2 o 3, además los síntomas acompañantes disminuyeron en número	Frecuencia absoluta
		Regular	Cuando el paciente evalúa el dolor en un nivel inferior al que tenía al inicio del tratamiento, pero los síntomas acompañantes no disminuyeron o, en caso contrario, aumentaron	
		Mala	Cuando el paciente evalúa el dolor al mismo nivel que al inicio del tratamiento o en un nivel superior, independientemente de si aparecieron o no otros síntomas acompañantes	
Reacciones adversas	Cualitativa discreta	- Lipotimia - Tendinitis - Flebitis. - Dolor intenso en el sitio de punción	Según número de reacciones adversas	Frecuencia absoluta

Fuente: Elaboración propia, 2024

Analysis and discussion of the results

Table 2 shows the distribution of the sample by age and sex. The most frequent age group is 60 years and older, with 25 patients, representing 39.68 %, followed by the 50 to 59 years age group, with 19 patients, representing 30.15 %.

There was a greater representation of the male sex, with 37 patients, representing 58.73 %, while the female sex had 26 patients, constituting 41.26 % of the total sample.

According to the 2020 statistical yearbook, the Cuban population was composed of 11,187,533 inhabitants, of whom 21.3% were 60 years of age or older (González, 2020, p. 4). This data evidences a sustained population aging in Cuba, in general and in Pinar del Río in particular, where in 2020 the population in the age group 50 to 59 years old was 97 307 people, and in the group 60 years old and over, 62 917 people.

Table 2 Distribution of the sample according to age and sex. Raúl Sánchez Community Polyclinic December 2023-March 2024

Edad	Sexo Femenino		Masculino		Total	
	Número	Por ciento	No.	%	No.	%
20-29	1	1,58	2	3,17	3	4,76
30-39	1	1,58	4	6,34	5	7,93
40-49	5	7,93	6	9,52	11	17,46
50-59	8	12,69	11	17,46	19	30,15
60 y más	11	17,46	14	22,22	25	39,68
Total	26	41,26	37	58,73	63	100

Source: Own elaboration, 2024

Table 3 shows the distribution of the sample according to the traditional diagnosis by Zang-Fu organs. It is evident that the most frequent syndrome is Liver Qi Stagnation, present in 41 patients, of which 20 are women and 21 are men, representing 65.07%. It is followed by Kidney yang deficiency, with 10 patients, of which 2 are women and 8 men, constituting 15.87 % of the study sample.

Table 3 Distribution of the sample according to traditional diagnosis by Zang- Fu Organ Syndromes

SíndromesZang-Fu		Sexo				Total	
		Femenino		Masculino			
		No.	%	No.	%	No.	%
Exceso	Estancamiento de Qi de Hígado	20	31,74	21	33,33	41	65,07
	Deficiencia de yang de Riñón	2	3,17	8	12,69	10	15,87
	Deficiencia de yang de Bazo y de Riñón	2	3,17	4	6,34	6	9,52
Deficiencia	Deficiencia de yin de Riñón	2	3,17	3	4,76	5	7,93
	Qi de Riñón no firme	0	0	1	1,58	1	1,58
Total		26	41,26	37	58,73	63	100

Source: Own elaboration, 2024

Table 4 shows the intensity of pain in patients with Lumbosciatic pain at the beginning of treatment, after the fifth session and at the end of treatment. At the beginning of treatment, 37 patients (58.73 %) presented severe pain. At the end of treatment, 42 patients (66.66 %) reported mild pain. Three patients showed no variation in their clinical status, remaining the same as at the beginning, while 11 patients rated their pain as moderate throughout the study, although the number of accompanying symptoms decreased.

Pain intensity scored by patients in VAS during treatment.

Intensidad del dolor	Intensidad del dolor Inicio del tratamiento		5ta sesión		Final del tratamiento	
	No.	%	No.	%	No.	%
Leve	3	4,76	15	23,8	42	66,66
Moderado	23	37,23	38	60,31	13	20,63
Severo	37	58,73	10	15,87	0	0
Total	63	100	63	100	55	87,63

Source: Own elaboration, 2024

In a comparative study between real electroacupuncture and sham acupuncture, the final assessment two weeks after the end of treatment showed no statistically significant difference between the groups in terms of change in pain scores. The following results were observed: for real electroacupuncture, the reduction was -4.33 (95 % CI, -6.36 to -2.30), while for sham acupuncture it was -2.90 (95 % CI, -4.85 to -0.95). The unadjusted difference between the groups was -1.50 (95 % CI, -3.72 to 0.72, $p = 0.18$), and after adjustment, the difference was -2.09 (95 % CI, -4.27 to 0.09, $p = 0.06$).

Table 5 shows the clinical course according to the traditional diagnosis by Zang Fu organs. Out of a total of 63 patients, 47 showed a positive clinical evolution, representing 74.60 % of the group. There were 13 patients with regular clinical evolution, equivalent to 20.63 %, and only 3 patients (4.76 %), with unfavorable clinical evolution, all diagnosed with Kidney Yin deficiency syndrome.

It is important to emphasize that, in the groups with regular and unfavorable clinical evolution, no deterioration in the patients' health status was observed. At the end of treatment, none of them reported severe pain or the appearance of new accompanying symptoms.

Table 5 Clinical evolution according to traditional syndromes

Síndromes Zang-Fu		Evolución clínica					
		Buena		Regular		Mala	
		No.	%	No.	%	No.	%
Exceso	Estancamiento de Qi de Hígado	41	65,07	0	0	0	0
Deficiencia	Deficiencia de Yang de Riñón	6	9,52	4	6,34	0	0

	Deficiencia de Yang de Bazo y de Riñón	0	0	6	9,52	0	0
	Deficiencia de Yin de Riñón	0	0	2	3,17	3	4,76
	Qi de Riñón no firme	0	0	1	1,58	0	0
Total		47	74,06	13	20,63	3	4,76

Source: Own elaboration, 2024

Conclusions

The systematization made it possible to form the theoretical references and reach conclusions, as well as to determine that lumbosciatic pain predominated in the age groups of 60 years and older, in the group of 50-59 years, with a higher incidence in men, the most frequent being the syndrome of Liver Qi stagnation, representing more than half of the cases, all patients diagnosed with this syndrome showed favorable clinical evolution, followed by Kidney Yang deficiency, representing more than half of the cases, all patients diagnosed with this syndrome showed a favorable clinical evolution, Kidney Yang deficiency followed, while only patients with Kidney Yin deficiency syndromes presented an unfavorable clinical evolution. At the beginning of the treatment, most patients experienced severe pain, but at the end of the treatment, a considerable number reported mild pain, five treatment sessions were needed in most cases to achieve pain relief, the most common adverse reaction reported by patients was severe pain at the puncture site. These findings highlight the effectiveness of electroacupuncture in the treatment of Lumbosciatic pain according to the traditional diagnosis.

Referencias bibliográficas

- Álvarez, T. A., Tosar, M. A y Echemendía, C. (2017). *Medicina tradicional china. Acupuntura, moxibustión y medicina herbolaria*. [Internet]. 2da ed. Ciencias Médicas. <http://www.bvscuba.sld.cu/libro/medicina-tradicional-china-acupuntura-moxibustion-y-medicina-herbolaria-2da-ed/>
- Cobos, R. (2013). Acupuntura, electroacupuntura, moxibustión y técnicas relacionadas en el tratamiento del dolor. *Revista Soc. Esp. Dolor* 20(5):263-277. <http://scielo.isiciii.es/scielo>.
- Delgado, C. A. (2013). *Electroestimulación en Medicina Natural y Tradicional. Apuntes para un curso*. MINSAP Departamento M.N.T. Edición corregida y Ampliada. p 1-78.
- Díaz, G., Lazo, L. A., Pérez, C., Ordoñez, L. Y., Aguilar, I. (2019). La medicina tradicional en afecciones lumbosacras en el adulto mayor. *Revista de Ciencias Médicas Pinar del Río* Vol. 3, No. 23, 397-406. <http://scielo.sld.cu/scielo.php?script=sci>
- González, M. (2020). Anuario estadístico de salud de Cuba. *Revista Médica Electrónica*. <https://revmedicaelectronica.sld.cu/index.php/rme/article/view/1720>
- Hernán, R. (2019). Acupuntura y Dolor. *Revista Médica Clínica Las Condes*. ISSN: 2531-0186/ ISSN: 0716-8640/© 2019 <https://www.journals.com/revista-clinica-las-condes>

- Hernández, A. y Zamora, D. (2017). Ejercicio Físico como tratamiento en el manejo de la Lumbalgia. *Revista de Salud Pública*. 19 (1). <https://doi.org/10.15446/rsap.v19n1.61910>
- Méndez, A. L., Boyer, A., Romero, J., Arteaga, L. B., Sánchez, M. P., Ramírez, M. L., Sánchez, S., et al. (2019). *Manejo integral en rehabilitación del dolor lumbar inespecífico en adultos de 18 a 59 años de edad. Guía de Práctica Clínica: Evidencias y Recomendaciones*. CENETEC. <http://www.cenetec-difusion.com/CMGPC/GPC-DIF-313-19/ER.pdf>
- Mu, J. Furlan, A. D., Lam, W.Y., Hsu, M.Y., Ning, Z. & Lao, L. (2020). Acupuncture for chronic nonspecific low back pain. *Rev Cochrane Database Syst*. CD013814. 10.1002/14651858.CD013814. <https://pubmed.ncbi.nlm.nih.gov/>
- Pascual, N., Cuello, J. y Gómez, D. B. (2018). Efectividad del tratamiento con laserpuntura en pacientes con acné vulgar. *Revista Ciencias Médicas*, 22(1), 38-48. http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1561-31942018000100007&Ing=es
- Puerta, J. L. (2009). *Clásico de la Medicina Interna del Emperador Amarillo*. <http://www.vohan.com.html.castellano/acupuntura.html>