

Interventional Study to Evaluate Efficacy of Acupuncture for Treating Sciatica Pain

Inderjit Singh¹, Salil Dube², Suryamani Pandey³, Neha Dhingra⁴

ABSTRACT

Introduction: Low back pain has a profound impact both directly and indirectly on individuals. It is estimated that 60% to 80% of any population will experience low back pain at some point in their lives. There are number of causes for low back pain and Sciatica is one of them. Study aimed to assess the efficacy of Acupuncture for the management of Sciatica pain.

Material and Methods: This study was conducted among 200 patients attending the Outdoor Patient department at Dr D.N. Kotnis Health and Education Center. With each subject a prior informed and written consent was obtained. A predesigned and pretested proforma was used to collect the socio demographic profile. Severity of Pain was measured with the help of Likert Scale whereas the reading on Likert scale was taken at the time of first visit and last visit of patients for comparison of pain. Data was first entered into MS excel sheet and then was exported to SPSS version 20.0 for appropriate analysis.

Results: Wilcoxon signed rank test was applied to determine the efficacy of the treatment on reducing the pain, further it was observed that the effect of the treatment was statistically significant ($p < 0.001$)

Conclusion: Acupuncture provides effective relief from Sciatica pain. However initiation of treatment at young age provides quick response and healing by reducing suffering of sciatica pain.

Keywords: Acupuncture, Sciatica Pain, Alternative Treatment for Sciatica Pain.

the sciatica nerve.

Sciatica, more accurately termed lumbar radiculopathy, is a syndrome involving nerve root impingement or inflammation that has progressed enough to cause neurological symptoms (e.g. pain, numbness, paraesthesia) in the areas that are supplied by the affected nerve root.³ Sciatica pain is affecting the quality of life and reducing the social and economic productivity. Posterior sciatica involves pain that radiates along the posterior thigh and the posterolateral aspect of the leg, and is due to S1 or L5 radiculopathy. When caused by S1 irritation, the pain may radiate to the lateral aspect of the foot, while pain due to L5 radiculopathy may radiate to the dorsum of the foot and to the large toe. Anterior sciatica involves pain that radiates along the anterior aspect of the thigh into the anterior leg, and is due to L4 or L3 radiculopathy. Pain due to L2 radiculopathy is antero-medial in the thigh, and pain in the groin usually arises from an L1 lesion.⁴

People who get sciatica are usually between the ages of 30 and 50 years with no gender predominance and significantly damaging the health.⁵ In about 90% of the cases sciatica is caused by herniated disc with nerve root compression.⁴ Lumbar spinal stenosis, spondylolisthesis, lumbar muscular spasm, malignancy, epidural hematoma or abscess are the other reasons for Sciatica pain syndrome. The pain is often worsened with flexion of the lumbar spine, twisting, bending, or coughing.⁶ Patient with sciatica usually experience pain in the lumbar spine which is almost unilateral and radiates to ipsilateral affected extremity. The pain is often described as burning and deep in the buttocks with heaviness in the leg.⁷ Nowadays many modern, traditional and conservative treatment modalities are available for curative treatment of sciatica pain. Sciatica treatment involves nonsurgical and surgical management. Conservative treatment for sciatica is primarily aimed at pain reduction, either by analgesics or by reducing pressure on the nerve root, it includes drugs,

INTRODUCTION

Low back pain is one of the most common musculoskeletal problems affecting the population having prevalence up to 80%.¹ It is widespread across many occupations from heavy industrial to light office work. The more cases of lower back pain are seen nowadays, due to prolonged sitting at workplace because of increasing urbanization, industrialization and sedentary lifestyle. Pain is usually transitory and can arise from the intervertebral discs, bones, ligaments and muscles of the spine. There are number of causes for lower back pain and Sciatica is one of them. Often the term sciatica is confused with general back pain. However, sciatica is not just limited to back.

Sciatica is a debilitating condition in which the patient experiences pain or paresthesias in the distribution of the sciatic nerve. The Sciatic nerve is a major and largest nerve, originating from Lumbosacral plexus from the ventral rami of L4-S3 and travelling posterior through the lower limb as far down the heel of the foot. It usually divides into tibial and common peroneal nerves.² The pain arises due to irritation of

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How to cite this article: Inderjit Singh, Salil Dube, Suryamani Pandey, Neha Dhingra. Interventional study to evaluate efficacy of acupuncture for treating sciatica pain. International Journal of Contemporary Medical Research 2019;6(9):19-112.

DOI: <http://dx.doi.org/10.21276/ijcmr.2019.6.9.31>

acupuncture, epidural steroid injections, traction therapy, hot packs.

In China, Sciatica is a primary cause for hospitalization and seeking acupuncture treatment for managing pain.⁸ Acupuncture is reported to be effective in treating many types of musculoskeletal pain including lower back pain, fibromyalgia, osteoarthritis and sciatica.⁹ Acupuncture appears to be associated with no adverse effects when compared to Non steroidal inflammatory drugs, it is an good option for the patients who cannot tolerate the adverse effects associated with drugs as well as surgical treatment. Traditional acupuncturists understand health in terms of “qi”, a vital force or energy which circulates between organs along the channels and meridians. Its benefits are now widely acknowledged all over the world, and in the past decade traditional acupuncture has begun to feature more prominently in mainstream healthcare in the United Kingdom. In conjunction with needling, the practitioner may use techniques such as moxibustion, cupping, or electro-acupuncture. Traditional Chinese Medicine classifies Sciatica as a *Bi syndrome* and considers it to be caused by stagnation of *qi* and blood in meridians

There has been multiple studies carried out to assess the efficacy of conservative treatment for Sciatica pain, but less research has been conducted in the field to assess the efficacy of acupuncture for sciatica pain. Study aimed to assess the efficacy of Acupuncture for the management of Sciatica pain.

MATERIAL AND METHODS

This study was conducted from June 2018- November 2018 among the patients attending Outdoor Patient Department at Dr. Dwarkanath Kotnis Acupuncture Health and Education Centre, Ludhiana, Punjab. A total of 200 patients between the age group of 15-54 years attended the OPD during study. With each subject a prior informed and written consent was obtained. A predesigned and pretested proforma was used to collect the socio demographic profile. Severity of Pain was measured with the help of Likert Scale whereas the reading on Likert scale was taken at the time of first visit and last visit of patients for comparison of pain.

Patients were treated by Acupuncture consultant with Acupuncture treatment. Acupuncture points were mainly selected from Foot-Shaoyang (GB) and the Foot- Taiyang (BL) meridians.

Acupoints chosen by the expert for treatment were -

- Shenshu UB23
- Dachangshu UB25
- Zhibian UB54
- Weizhong UB49
- Kunlun UB60
- Yangling Quan GB34

Treatment was given in prone position as it was easy to select acupuncture points on lumbar and gluteal region and the posterior region of the lower limbs.

A single use sterilized filiform needle made up of stainless steel was used for acupuncture on body.

Points were punctured until needling sensation was achieved,

then points were connected to electrical stimulator for 30 minutes. Heating of acupuncture needles was done through moxibustion for total 10 minutes in every patient.

Treatment was given once a day daily followed by rest period of 10 days. Total duration of treatment was based on age group and the severity of pain.

The collected data was analyzed statistically by SPSS Version 20.0. Appropriate statistical tests were applied to determine the efficacy of the treatment.

RESULTS

A sum of 200 study subjects were included in the study from June 2018 to November 2018, out of which 124 (62%) were males and 76 (38%) were females (Figure 1).

In this study majority 88(44%) of the study subjects belonged to age of 25-34 years followed by 84 (42%), 24 (12%) and 4 (2%) in the age group of 35-44 years, 45-54 years and 15-24 years respectively (Figure 2).

Table 1 shows the distribution of study subjects by duration of treatment days.

The pain score of the study subjects was measured on Likert's scale from 0-10 where in 0 score was given for no pain, 1-3 score was given for mild pain, 4-6 score for moderate pain, 7-9 for severe pain and 10 indicates worst pain. However on first visit 114 (57%) of patients were experiencing mild pain followed by 54(27%) having moderate pain, 16(8%) and 16 (8%) having worst pain (Table 2).

Treatment days	Frequency	%
20 days	4	2
30 days	172	86
60 days	24	12
Total	200	100

Table-1: Distribution of Study subjects by duration of treatment days.

Reading on Likert Scale	Frequency	%
2	14	7
3	100	50
4	3	1.5
5	30	15
6	21	10.5
7	2	1
8	10	5
9	4	2
10	16	8
Total	200	100

Table-2: Pain score before treatment

Reading on Likert Scale	Frequency	%
0	125	62.5
1	30	15
2	27	13.5
3	13	6.5
5	5	2.5
Total	200	100

Table-3: Pain score after receiving the treatment.

Gender	Days of Treatment				Total	%	$\chi^2(df)$	p
	≤30 days	%	31-60 days	%				
Males	115	92.7	9	7.3	124	100	6.984(1)	0.008
Females	61	80.3	15	19.7	76	100		
Total	176	88	24	12	200	100		

Table-4: Distribution of study subjects by gender and treatment days.

Age	Days of Treatment				Total	%	$\chi^2(df)$	p
	≤30 Days	%	31-60 Days	%				
15-34	92	100	0	2	92	100	23.23(1)	0.00
35-55	84	77.8	24	22.2	108	100		
Total	176	88	24	12	200	100		

Table-5: Distribution of study subjects by age and treatment days

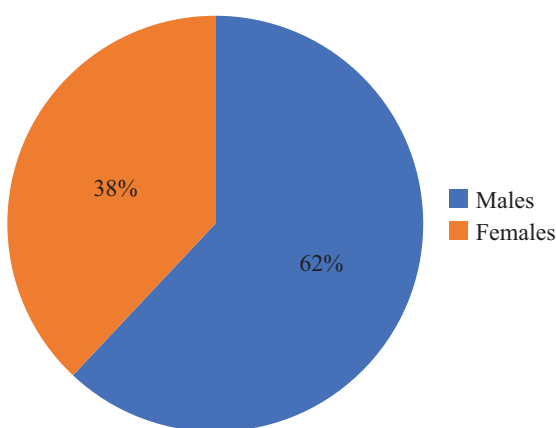


Figure-1: Distribution of Study subjects by Gender.

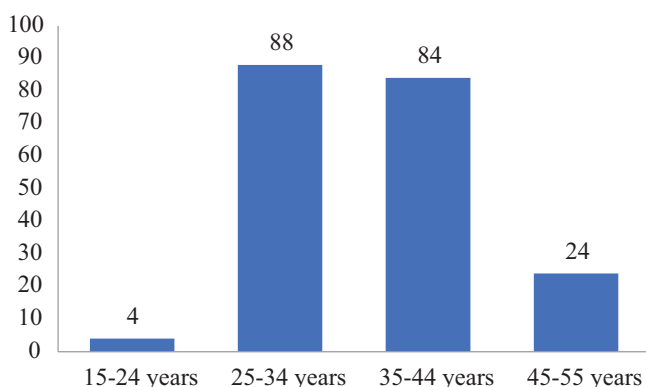


Figure-2: Distribution of Study subjects by age.

It has been noted that 125 (62.5%) of the patients had no pain and none of the patient experienced severe poor worst pain after receiving the treatment on last visit (Table 3).

Wilcoxon signed rank test was applied to determine the efficacy of the treatment on reducing the pain, further it was observed that the effect of the treatment was statistically significant $p < 0.001$.

The study shows that the days of treatment differs statistically significant ($p = 0.008$) across the genders of study subjects. The majority of males 115 (92.7%) had a relief in pain within 30 days and only 9 (7.3%) required treatment for more than 30 days. It was further observed that 61 (80.3%) of females who recovered within 30 days where as 15 (19.7%) required treatment for more than 30 days (Table 4).

It was further determined that age and days of treatment had

significant association ($p < 0.001$) as majority of patients 92 (100%) who recovered within 30 days were between age of 15-34 years and 24 (22.2%) patients who required the treatment for 31-60 days belonged to age of 35-55 years (Table 5).

DISCUSSION

Sciatica pain causes significant suffering to the individual and affects the quality of life and also reduces the social and economic efficiency. It is specific to the pain that is a direct result of sciatica nerve. In June 1979, the World Health Organization (WHO) conducted a symposium on acupuncture in Beijing, China, and created a list of 43 diseases that might benefit from acupuncture and Sciatica is one of these diseases.¹⁰ The official report on the effectiveness of acupuncture that is based on data from controlled clinical trials before the end of 1998 was published in 2003.¹¹ The results of our study suggested that acupuncture is an effective treatment of sciatica.

Due to insufficient number of relevant studies on acupuncture, the evidence is limited. It has been found in the study conducted by Han that acupuncture can promote release of neurotransmitter such as 5-hydroxytryptamine and in addition it generates neuropeptide through electrical stimulation which has significant effect to reduce pain.¹² Similarly in this study there was reduction in pain severity of the patients after the treatment. Acupuncture is also thought to stimulate inhibitory nerve fibers for short period, reducing transmission of pain signal to the brain.¹³

In the meta-analysis done by Ji et al who has surveyed 12 studies involving 1842 participants concluded that acupuncture was more effective than conventional western medicine.¹⁴ For treatment with acupuncture, it is are required to have deep understanding of sciatica and acupuncture from the aspect of TCM so that clinical techniques could be rigorous.

In this study the points for treating sciatica pain were selected from Gall Bladder and Bladder meridians which have shown an significant improvement in the pain. The analysis done by Ching et al of 14 studies, revealed that selection of meridians and acupoints is an essential issue to get better pain alleviating results, and highlighted the strategy of concentrating on the Bladder and Gall bladder meridians.¹⁵

Limitation

Severity of pain on Likert Scale is on subjective basis.

CONCLUSION

Study concludes that Acupuncture can provide effective relief from sciatica pain. However outcome also claims quick recovery on early treatment initiation of disease, whereas treatment is prolonged as disease gets chronic, finding also claims that the initiation of treatment at young age provides quick response and healing by reducing suffering of sciatica pain.

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Source of Support: Nil; **Conflict of Interest:** None

Submitted: 10-08-2019; **Accepted:** 30-08-2019; **Published:** 26-09-2019