

FREQUENCY OF SACROILIAC JOINT DYSFUNCTION IN LOW BACK PAIN PATIENTS (A DESCRIPTIVE CROSS-SECTIONAL STUDY)

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ABSTRACT

Background:

Lower back pain distress individuals of all age groups and is a leading contributor to increasing disability universally. The sacroiliac joint (SIJ) is known as a cause of pain in several patients with chronic back pain. The prevalence of SIJD has been found to be between 15% to 30% that corresponds to a large population with incapacity, disability and pain.

Objective:

Objective of the study is to find the frequency of sacroiliac joint dysfunction in low back pain patients of Lahore Pakistan.

Methodology:

This research is a Descriptive cross-sectional study. This study includes 250 lower back pain patient including men and women. This study was conducted at 8 hospitals around Lahore. This study was conducted within the duration of three months i.e., from September 2019 to November 2019. Convenient sampling was used. The cluster test of SIJ was used to find the frequency of SIJ dysfunction in patients of low back pain. SPSS 21 was used to analyze descriptive Statistical data.

Results:

Sacroiliac joint pain is associated with low back pain. And the ratios are as follows. Mean age is 42.64 years with standard deviation 11.664. And the gender-based distribution of the patients. 51.6% were male and remaining 48.4% were female patients of low back pain The distraction test is found positive in 38% of patients while sacral thrust is found 44% positive. Thigh thrust test are 33% positive and compression and Gaenslen's test are 28% and 22% positive respectively and drop test is 10% positive. According to the research 29.2% of patients with low back pain presents the SIJ dysfunction.

Conclusion:

This study concluded that the all the patients who were presenting with low back pain also suspected to have the SIJ dysfunction. According to WHO the relation of SIJ dysfunction degeneration with low back is increasing and is in between 14 to 22%. SIJ is cited to be common cause of LBP. This study concluded that 29 percent of patients with LBP were suffered from SIJ dysfunction.

Key Words: Sacroiliac joint dysfunction, Low back pain, Cluster test

INTRODUCTION

Lower back pain distress individuals of all age group and is a leading contributor to increase disability globally (1) (2). Lower back pain (LBP) is outlined as a pain localized among the twelfth rib and the striated gluteal muscle folds, with or devoid of leg pain. Most cases are non-specific, however in 10% of cases a particular cause is known.(3) (4) Low back pain (LBP) is one of the musculoskeletal disorders that localized between the coastal margin and above inferior gluteal region that may be radiate or not in to the leg. Major factors for developing low back pain are muscle weakness, ligament injury, and damage to inter vertebral disc.(5) Non-specific low back pain is known as low back pain which is not attributable to a identified specific disease(e.g. infection, tumors, pathology, inflammatory disorder, fracture, radicular syndrome, structural deformity, cauda equina syndrome) (6) (7) Around the world low back pain have important effect in the emergency wards. According to research it is one of the increasing causes of patients' visits to emergency wards. The previous studies about the incidence of low back pain are stated to be as high as eighty-four percent, and best estimates show that the incidence of chronic low back pain is 23 percent, with 11–12% of the people being disabled by it.(6) The sacroiliac joint (SIJ) is known cause of pain in several patients with chronic back pain.(8) In the previous 2 reviews of patient analysis for back pain, SIJ pain was a typical cause of pain origin in 14 percent and twenty-two 22 percent of cases. (9) The lumbar spine offers six times bigger resistance than sacroiliac joint to forces that are medially directed. Moreover, it is a synovial joint which joins the pelvis to the sacrum with very little movement. These all motions and movements happen in synergy.(10) So that Sacroiliac joint will never move alone. Sacroiliac joint has a role of shock absorber in the body and it transfer all weight and load from the upper body to the lower body. And distribute the weight from the left side of body to the right side.(9) In chronic back pain patients having 3 or more of the positive aggravating SIJ tests and those symptoms cannot be created to centralize have a chance of getting SIJ pain of seventy-seven percent, and in pregnant women with back pain, there is a chance of eighty-nine 89%. This blend of tests (cluster test) can be used in the research purpose to assess the betterment in the patient of SIJ pain and their treatment.(11) The Sacroiliac joint pathology (SIJD) is the key causes of low back pain however it's usually unnoticed throughout the identification method. The prevalence of SIJD has been found to be between 15% to 30% that corresponds to a large population with incapacity , disability and pain.(12)The sacroiliac (SIJ) as a cause of pain has been debatable; but now evidence increasing regarding the joint dysfunction and its part as a pain producer in patients. The literature reports that the sacroiliac joint as the cause of pain origin is around 30% of patients presenting with lower back pain(13) This study has not been done in Pakistan (regional gap). This study will help to find out the association of low back pain with SIJ dysfunction in Lahore Pakistan. Study findings will help in early detection of disease and will modify the treatment protocols. It will be Helpful in measuring the load of disease linked to the SIJ dysfunction.

METHODS

Descriptive cross sectional study design was used. The patients with lower back pain were considered in this study. Study was carried out at Ch. M. Akram teaching and research hospital and General hospital Lahore. This study took 3 months in completion from concerned settings. A 250-sample size was taken by the formula. In this study Convenience sampling technique was used. Data was collected from the patients of low back pain from above mentioned hospitals after an informed consent. The ethical committee of Azra Naheed medical college approved the execution of the study in other hospitals. It doesn't affect the patient ethical values. Researcher followed all the medical related ethics. **Inclusion criteria:** Patients with undiagnosed chronic low back pain, Age ranges from 21–70 years at screening. **Exclusion criteria:** Patients with synovial cysts, Patients with diagnosed Disc degeneration, Sacroiliac pathologies like tumor, fracture, Pregnancy linked low back pain, Drug abuse. **Data collection procedure:** After getting the approval from the physiotherapy department of Azra Naheed Medical College a descriptive cross-sectional study was conducted. To gather data about frequency of sacroiliac joint dysfunction in the patients with low back pain, a survey was conducted in many hospitals of Lahore. In which 250 patients with the condition of inclusion criteria were added to research, and they were examined with the tests to figure out the SIJ dysfunction. Cluster test of sacroiliac joint was used including thigh thrust, Gaenslen's, sacral thrust, distraction and compression test to figure out the SIJ dysfunction in the patients of low back pain. 3 out of 5 tests being positive specified sacroiliac joint dysfunction. Informed consent was taken from the patients. Patient with nonspecific lower back pain, chronic low back pain, undiagnosed pain and age ranges from 21–70 years old were included. Patients with acute lower back pain, synovial cysts, and with other sacroiliac pathologies like tumor fracture and pregnant women were excluded. Patients who fulfilled the inclusion criteria were selected from above mentioned hospitals. Data was efficiently gathered from patients after taking approval and permission letter from university and high authority of hospital. All collected data was entered in computer program SPSS version 21 and calculated through this software. For categorical variables frequency and percentage was used for discrete variables mean and standard deviation was used.

RESULTS

Table 1 Gender

| | Frequency | Percent |
|---------------|-----------|---------|
| Male | 129 | 51.6 |
| Female | 121 | 48.4 |
| Total | 250 | 100.0 |

Table 2 Mean age of the participants

| | N | Minimum | Maximum | Mean | Std. Deviation |
|------------|----------|----------------|----------------|-------------|-----------------------|
| Age | 250 | 21 | 70 | 42.64 | 11.664 |

Table 1 shows the gender-based distribution of the patients. 51.6% were male and remaining 48.4% were female patients of low back pain. Table 2 shows the mean age of the patients. Mean age is 42.64 years with standard deviation 11.664.

Tests of the SIJ dysfunction

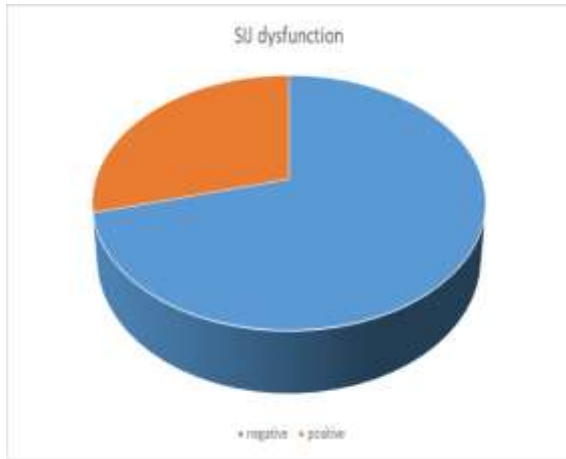
| | Frequency | Percent |
|----------------------------------|------------------|----------------|
| <u>Distraction test</u> | | |
| Positive | 95 | 38.0 |
| Negative | 155 | 62.0 |
| Total | 250 | 100.0 |
| <u>Sacral thrust test</u> | | |
| Positive | 110 | 44.0 |
| Negative | 140 | 56.0 |
| Total | 250 | 100.0 |
| <u>Thigh thrust</u> | | |
| Positive | 83 | 33.2 |

| | | |
|--------------------------------|-----|-------|
| Negative | 167 | 66.8 |
| Total | 250 | 100.0 |
| <u>Compression test</u> | | |
| Positive | 70 | 28.0 |
| Negative | 180 | 72.0 |
| Total | 250 | 100.0 |
| <u>Gaenslen's test</u> | | |
| Positive | 55 | 22.0 |
| Negative | 195 | 78.0 |
| Total | 250 | 100.0 |
| <u>Drop test</u> | | |
| Positive | 25 | 10.0 |
| Negative | 225 | 90.0 |
| Total | 250 | 100.0 |

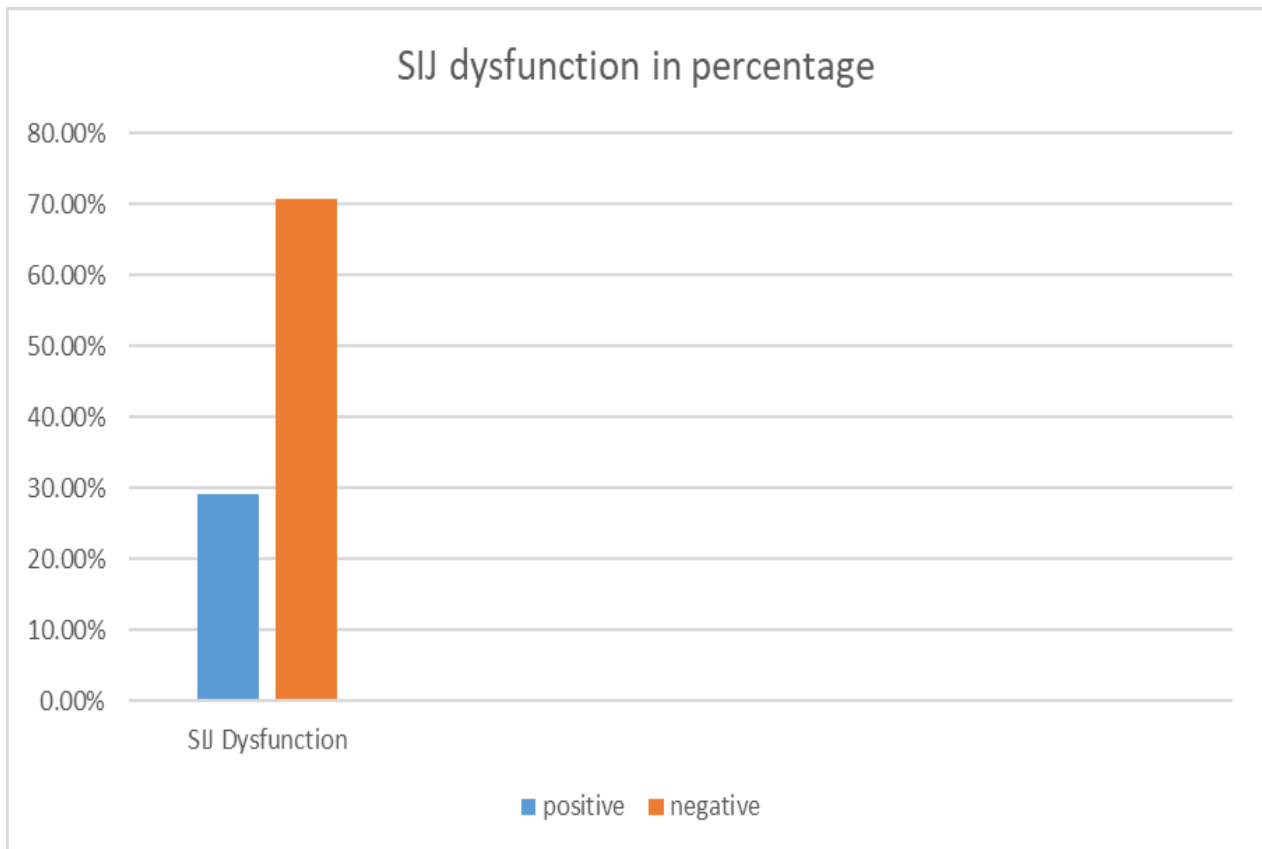
This is the negative and positive ratio of All cluster tests of SIJ.



According to above mentioned tests and through criteria that patients having 3 or more test positive are diagnosed cases of SIJ dysfunction, 29.2% were found diagnosed SIJ dysfunction. 70.8% were not having SIJ dysfunction. So, prevalence of the SIJ dysfunction in patients of low back pain is 29.2%.



| | Frequency | Percent |
|-----------------|-----------|---------|
| Positive | 73 | 29.2 |
| Negative | 177 | 70.8 |
| Total | 250 | 100.0 |



DISCUSSION

The result of this study revealed that 29.2% of patients with low back pain have SIJ dysfunction as a root cause of pain. Which means that 73 patients out of 250 have positive tests of SIJ dysfunction and 177 remaining were negative on test. There is no higher percentage of positive tests of SIJ with LBP but the percentage is significant. According to the above-mentioned tests and criteria that patients having 3 or more test positive are diagnosed cases of SIJ dysfunction, 29.2% were found diagnosed with SIJ dysfunction. 70.8% were not having SIJ dysfunction. Lower back pain distress individuals of all age groups and is a leading contributor to increase disability universally. Lower back pain has become one of the main issues for health system within the European world and currently looks to be spread globally. Studies from the USA showed the proportion of physicians' visit related to back pain has modified very little within the past few years, but the expense has increased considerably. The previous studies about the incidence of low back pain are stated to be as high as eighty-four percent, and best estimates showed that the incidence of chronic low back pain is 23 percent, with 11–12% of the people being inactivated by it.(6) This long term pain can lead to disability and psychological problems. According to research, the risk of developing musculoskeletal problems in the workplace is influenced by the presence of psychosocial factors. Low back pain along with SIJ dysfunction is the major health problem in various countries. It is the known cause of pain and disability and has significant effect on work.(14) According to a research paper ignoring and delaying the treatment of SIJ dysfunction will be costly. Because it increases the time and cost of treatment. Patient health is also affected because of long term pain and limitation of work-related activities. Because of late diagnosis treatment cost will increase due to the complications of being left untreated. In 2008 Laslett et al. assessed the diagnostic utility of the McKenzie analysis combined with the subsequent SIJ tests: distraction test, Gaenslen's test, thigh thrust test, sacral thrust and compression tests. These tests have good sensitivity and specificity. Sensitivity is 0.88 ranging (0.64, 0.97) and specificity 0.78 (0.61, 0.89). Because the Sacroiliac joint pathology (SIJD) is the key cause of low back pain, however it is usually unnoticed throughout the assessment process. In this study the relationship of SIJD with low back pain has been cleared. In another research paper prevalence of SIJD has been found to be between 15% to 30% that corresponds to a large population with incapacity, disability and pain.(12) The sacroiliac (SIJ) as a cause of pain has been debatable issue but now evidence has been increased regarding the joint dysfunction and its part as a pain producer in patients. The literature reports that the sacroiliac joint as the cause of pain origin is around 30% in patients presenting with lower back pain(13). Ignoring the main cause of pain and discomfort and weakness will increase the course of treatment and consume more time and money. This study shows the association among SIJ dysfunction and lower back pain. And reveals the frequency of SIJ with LBP which is 29% in Lahore. Hence while diagnosing and treating the patient of LBP, tests of SIJ dysfunction should be performed to rule out the correct diagnoses. This study will help us to identify the origin of lower back pain, so that treatment protocol for low back pain (LBP) could be modified. The early detection will make treatment easier and recovery will be faster. And psychological suffering of patient related to pain and disability will be resolved early.

CONCLUSION

This study concluded that the patients present with low back pain were also suspected to have SIJ dysfunction. Sacroiliac joint pain is significantly associated with the low back pain. The distraction test is found positive in 38% of patients while sacral thrust is found 44% positive. Thigh thrust test is 33% positive and compression and Gaenslen's test are 28% and 22% positive respectively and drop test is 10% positive. According to the research 29.2% patient having low back pain presents with the sij dysfunction.

RECOMMENDATIONS

LBP should be assessed with different tests to find out the other causes of pain. A study should be conducted at national level to find the frequency of SIJD with low back pain in different regions of Pakistan. A study should be conducted to find the frequency of low back pain in other musculoskeletal disorders. Further studies should be conducted for more advanced results.

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