

PHYSIOTHERAPY TREATMENT IN LOW BACK PAIN PATIENTS WITH SACROILIAC JOINT DYSFUNCTION – A COMPARATIVE STUDY BETWEEN JOINT MANIPULATION WITH EXERCISES AND CONVENTIONAL PHYSIOTHERAPY EXERCISES

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ABSTRACT

Low back pain with Sacroiliac joint dysfunction is one of the major causes of low back pain. The present study conducted in order to find out the efficacy of Sacroiliac (SI) joint manipulation with exercises and conventional physiotherapy exercises on improvement in the low back pain patients with sacroiliac joint dysfunction. Total 120 patients with low back pain with Sacroiliac joint dysfunction from the Physiotherapy O.P.D., UIHS, CSJM University, Kanpur were divided into two groups and evaluated to find out the efficacy of the treatment. The study concluded from the results that the overall improvement in low back pain is better in Group A i.e. where the selected 60 patients were given Sacro-iliac joint manipulation with exercises than the Group B where the selected 60 patients were given conventional physiotherapy exercises.

KEY WORDS: Physiotherapy, Low Back pain & Sacroiliac joint.

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INTRODUCTION

Low back pain (LBP) is a major health problem among populations on global level, and a major cause of medical expenses and disability. The clinical evidences have revealed that almost all age group of population are affected from this health problem except children. This pain is self-limiting and benign disease that tends to improve spontaneously over time [1]. Low back pain can be caused by a variety of problems interconnected with spinal muscles, nerves, bones, discs, tendons and joints in the spine [1]. The Sacroiliac (SI) joint dysfunction is one of the major causes of low back pain. This dysfunction is a term often used to describe pain in or

around the region of the joint that is presumed to be due to biomechanical disorders of the joint [1]. Physiotherapy is one of the most widely used forms of treatment adopted for gaining relief from low back pain. It is used in both modes, as a single line of treatment as well as in combination with other treatments such as massage, heat, traction, ultrasound or short wave diathermy [1]. The low back pain with SI joint dysfunction may require intensive manipulation therapy for improvement with exercises [1]. Mobilization and brace have been also included in low back pain management with exercises. However, the effectiveness associated with most of these interventions, has not yet been

demonstrated beyond doubt and, consequently, the therapeutic management of low back pain varies widely. There are several techniques which have been developed and adopted by physiotherapists for treatment of this problem [1].

OBJECTIVE: To find out the efficacy of Sacroiliac (SI) joint manipulation with exercises and conventional physiotherapy exercises on improvement in the low back pain patients with sacroiliac joint dysfunction.

MATERIALS AND METHODS

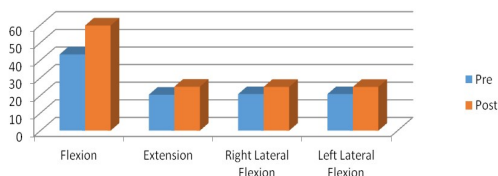
Study included 120 patients with low back pain with Sacroiliac joint dysfunction from the Physiotherapy O.P.D., UIHS, CSJM University, Kanpur. Only those patients were selected who fulfilled the inclusion criteria. The patients were divided into two groups i.e. Group A and Group B. The entire 60 Group A patients received SI joint manipulation along with exercises and all the 60 Group B patients received conventional physiotherapy exercises. A prospective repeated-measures design is used to determine the efficacy of two interventions during a four-week program. Each measurement will be taken two times: at baseline level (pre-test) and after the last session of intervention, i.e., after four weeks of therapy (post-test).

Pre-test Measurements of the patients: All subjects are tested using pre-test measurements, which includes calculation of spinal range of motion measurement, as per functional disability measurement using the Oswestry Low Back Pain Disability Questionnaire, and average VAS at rest and while active.

Post-test Measurements of the patients: All subjects are tested by using post-test measurements for improvement evaluation after last session of therapy during a four week treatment intervention course through selected therapies.

Data Analysis: After data collection and interpretation, data is analyzed using SPSS version 15.

Lumbar Joint Evaluation - Group A:

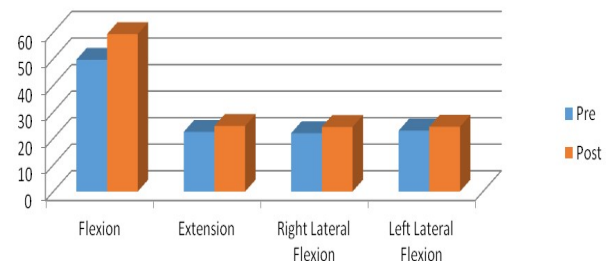


Wilcoxon Signed rank test results:

		Mean	Std. Deviation	Wilcoxon Signed rank test p-value
Flexion	Pre -Post	-16.4	8.80716	4.77E-11
Extension	Pre -Post	-4.55	2.65805	0
Right Lateral Flexion	Pre -Post	-4.1	4.35968	1.78E-07
Left Lateral Flexion	Pre -Post	-4.1	4.94958	1.17E-06

Interpretation: Since p-value for average scores in Pre and Post of Flexion when compared using Wilcoxon Signed rank test is less than that of 0.05 indicates significance of change in from Pre-score to Post-Score. Since p-value for average scores in Pre and Post of Extension when compared using Wilcoxon Signed rank test is less than that of 0.05 indicates significance of change in from Pre-score to Post-Score. Since p-value for average scores in Pre and Post of Right lateral Flexion when compared using Wilcoxon Signed rank test is less than that of 0.05 indicates significance of change in from Pre-score to Post-Score. Since p-value for average scores in Pre and Post of Left Lateral Flexion when compared using Wilcoxon Signed rank test is less than that of 0.05 indicates significance of change in from Pre-score to Post-Score.

Group B:



Wilcoxon Signed rank test results:

		Mean	Std. Deviation	Wilcoxon Signed rank test p-value
Flexion	Pre -Post	-9.68333	5.81783	7.07E-11
Extension	Pre -Post	-2.2	2.82723	2.40E-06
Right Lateral Flexion	Pre -Post	-2.35	2.82738	7.60E-07
Left Lateral Flexion	Pre -Post	-1.48333	2.69646	0.000256

Interpretation: Since p-value for average scores in Pre and Post of Flexion when compared using Wilcoxon Signed rank test is less than that of 0.05 indicates significance of change in from Pre-score to Post-Score. Since p-value for average scores in Pre and Post of Extension when compared using Wilcoxon Signed rank test is less than that of 0.05 indicates significance

of change in from Pre-score to Post-Score. Since p-value for average scores in Pre and Post of Right lateral Flexion when compared using Wilcoxon Signed rank test is less than that of 0.05 indicates significance of change in from Pre-score to Post-Score. Since p-value for average scores in Pre and Post of Left Lateral Flexion when compared using Wilcoxon Signed rank test is less than that of 0.05 indicates significance of change in from Pre-score to Post-Score.

Hip Joint Evaluation (Flexion) - Pre-Post Comparison:

	Pre to Post comparison	Mean	Std. Deviation	Wilcoxon Test p-value
Group A	Right	-13.45	13.16959	1.18E-12
	Left	-8.15	1.64497	1.31E-11
Group B	Right	-3.7	3.19056	7.80E-12
	Left	-3.6333	1.84084	1.36E-10

Interpretation: Since p-value for average scores when compared for Pre to Post of Flexion of Right side when compared using Wilcoxon Signed rank test is less than that of 0.05 indicates significance of change in from Pre-score to Post-Score in Group A. Since p-value for average scores when compared for Pre to Post of Flexion of Left side when compared using Wilcoxon Signed rank test is less than that of 0.05 indicates significance of change in from Pre-score to Post-Score in Group A. Since p-value for average scores when compared for Pre to Post of Flexion of Right side when compared using Wilcoxon Signed rank test is less than that of 0.05 indicates significance of change in from Pre-score to Post-Score in Group B. Since p-value for average scores when compared for Pre to Post of Flexion of Left side when compared using Wilcoxon Signed rank test is less than that of 0.05 indicates significance of change in from Pre-score to Post-Score in Group B.

Hip Joint Evaluation (Adduction) - Pre-Post Comparison:

Pre-Post Comparison:

	Pre to Post comparison	Mean	Std. Deviation	Wilcoxon Test p-value
Group A	Right	1.13333	7.00476	0.0499
	Left	-2.41667	0.49717	3.26E-12
Group B	Right	3.86667	7.36107	0.4369
	Left	-0.81667	0.56723	2.47E-10

Interpretation: Since p-value for average scores when compared for Pre to Post of Adduction of Right side when compared using Wilcoxon Signed rank test is less than that of 0.05 indicates significance of change in from Pre-score to Post-Score in Group A. Since p-value for average scores when compared for Pre to Post of Adduction of Left side when compared using Wilcoxon Signed rank test is less than that of 0.05 indicates significance of change in from Pre-score to Post-Score in Group A. Since p-value for average scores when compared for Pre to Post of Adduction of Right side when compared using Wilcoxon Signed rank test is greater than that of 0.05 indicates no significance of change in from Pre-score to Post-Score in Group B. Since p-value for average scores when compared for Pre to Post of Adduction of Left side when compared using Wilcoxon Signed rank test is less than that of 0.05 indicates significance of change in from Pre-score to Post-Score in Group B.

Functional Disability Measurement

Oswestry Disability Index

Pre-Post Comparison:

	Group A	Group B
Z	-6.741	-6.744
p-value	0.0	0.0

Interpretation: Since p-value for average scores when compared for Pre to Post using Wilcoxon Signed rank test is less than that of 0.05 indicates significance of change from Pre-score to Post-Score in Group A. Since p-value for average scores when compared for Pre to Post using Wilcoxon Signed rank test is less than that of 0.05 indicates significance of change from Pre-score to Post-Score in Group B.

Visual Analogue Scale (VAS) Score

Rest:

Pre-Post Comparison:

	Group A	Group B
Z	-6.781	-6.832
p-value	0.0	0.0

Interpretation: Since p-value for average scores when compared for Pre to Post using Wilcoxon Signed rank test is less than that of 0.05 indicates significance of change from Pre-score to Post-Score in Group A. Since p-value for average scores when

compared for Pre to Post using Wilcoxon Signed rank test is less than that of 0.05 indicates significance of change from Pre-score to Post-Score in Group B.

RESULTS & DISCUSSION

Results of the analysis showed that the respondents in both the groups i.e. Group A where the selected 60 patients were provided with Sacro-iliac joint manipulation with exercises and Group B where the selected 60 patients were provided with conventional physiotherapy exercises, are of almost same age. Results of analysis showed that since p-value for average scores in Pre and Post of Flexion when compared using Wilcoxon Signed rank test is less than that of 0.05 indicates significance of change in from Pre-score to Post-Score. Results revealed that since the average scores are constant in the Abduction of hip joint. It is concluded that the Abduction does not show any difference when compared Pre and Post in each of the group.

Since p-value for average scores when compared for Pre to Post using Wilcoxon Signed rank test is less than that of 0.05 indicates significance of change from Pre-score to Post-Score in Group A. P-value for average scores when compared for Pre to Post using Wilcoxon Signed rank test is less than that of 0.05 indicates significance of change from Pre-score to Post-Score in Group B. Since p-value for Mann-Whitney U test for average scores at Pre evaluation, when compared between Group A and Group B, is greater than that of 0.05 indicates no significance of difference between Group A and Group B. P-value for Mann-Whitney U test for average scores at post evaluation, when compared between Group A and Group B, is less than that of 0.05 indicates significance of difference between Group A and Group B.

CONCLUSION

The study concluded from the results that the overall improvement in low back pain is better in Group A i.e. where the selected 60 patients were given Sacro-iliac joint manipulation with exercises than the Group B where the selected 60 patients were given conventional physiotherapy exercises. The study concluded that there is a better improvement in flexion &

extension of lumbar joint of those patients who are part of Group A i.e. where the selected 60 patients were given Sacro-iliac joint manipulation with exercises as compared to Group B where the selected 60 patients were given conventional physiotherapy exercises. Study also concluded that there is a better improvement in right lateral flexion and left lateral flexion of those patients who are part of Group A i.e. where the selected 60 patients were given Sacro-iliac joint manipulation with exercises as compared to Group B where the selected 60 patients were given conventional physiotherapy exercises.

Conflicts of interest: None

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