

	ORIGINAL RESEARCH PAPER		Orthopaedics
EVALUATION OF THERAPEUTIC EFFICACY OF FLUOROSCOPY-GUIDED SACROILIAC JOINT STEROID INJECTION IN PATIENTS WITH SACROILIAC JOINT DYSFUNCTION			KEY WORDS: Sacroiliac joint dysfunction; Steroid injection; Fluoroscopy-guided injection; Chronic low back pain; Visual Analog Scale; Oswestry Disability Index
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ABSTRACT	Background Sacroiliac joint (SIJ) dysfunction is a significant but frequently overlooked cause of chronic low back pain, accounting for approximately 15–30% of cases. The diagnosis is often challenging due to nonspecific clinical manifestations and overlap with lumbar spine pathology. Fluoroscopy-guided intra-articular steroid injection has emerged as an effective minimally invasive treatment modality for SIJ dysfunction. Objective To evaluate the therapeutic efficacy and safety of fluoroscopy-guided sacroiliac joint steroid injection in patients with sacroiliac joint dysfunction. Materials and Methods A prospective observational study was conducted in the Department of Orthopaedics at a tertiary care teaching hospital over 18 months. Fifty adult patients diagnosed with SIJ dysfunction based on clinical examination and positive provocation tests were included. All patients underwent fluoroscopy-guided intra-articular steroid injection and were followed for six months. Pain intensity was assessed using the Visual Analog Scale (VAS), while functional status was evaluated using the Oswestry Disability Index (ODI). Statistical analysis was performed using SPSS version 26.0. Results The mean age of the study population was 45.6 ± 10.8 years, with female predominance (56%). Mean VAS score significantly improved from 7.6 ± 1.1 at baseline to 2.9 ± 1.4 at six months (p<0.001). Mean ODI improved from 48.2 ± 9.4% to 22.1 ± 8.1% (p<0.001). Sustained pain relief at six months was observed in 76% of patients. Good-to-excellent patient satisfaction was reported by 76% of participants. Only minor complications occurred in 12% of cases, and no major adverse events were observed. Conclusion Fluoroscopy-guided sacroiliac joint steroid injection is a safe and effective treatment modality for SIJ dysfunction, producing significant improvement in pain and functional disability with a low complication rate.		
	INTRODUCTION Low back pain is among the leading causes of disability worldwide and imposes significant socioeconomic and healthcare burdens. The sacroiliac joint has been increasingly recognized as an important source of chronic low back pain, accounting for approximately 15–30% of cases. However, SIJ dysfunction remains underdiagnosed due to its complex anatomy, overlapping symptomatology, and absence of definitive diagnostic criteria. The sacroiliac joint is a synovial articulation responsible for transmitting loads between the spine and lower extremities. Degenerative changes, trauma, pregnancy, inflammatory conditions, repetitive stress, and previous lumbar fusion surgery can contribute to SIJ dysfunction. Conservative treatment modalities such as analgesics, physiotherapy, activity modification, and exercises often provide incomplete relief in chronic cases. Consequently, image-guided intra-articular steroid injections have gained popularity as minimally invasive interventions capable of reducing inflammation and alleviating pain. Fluoroscopy-guided SIJ injections permit accurate placement of medication within the joint cavity, thereby improving therapeutic outcomes and minimizing complications. Although several studies have demonstrated promising short-term results, evidence regarding intermediate-term efficacy and functional improvement remains limited in the Indian population. Therefore, the present study was conducted to evaluate the therapeutic efficacy and safety of fluoroscopy-guided sacroiliac joint steroid injection in patients with sacroiliac joint dysfunction.		
MATERIALS AND METHODS			
Study Design Prospective observational study.			
Study Setting Department of Orthopaedics, Index Medical College Hospital and Research Centre, Indore, Madhya Pradesh, India.			
Study Duration 18 months.			
Study Population Fifty adult patients with clinically diagnosed sacroiliac joint dysfunction.			
Inclusion Criteria • Age ≥18 years. • Chronic low back pain suggestive of SIJ dysfunction. • Positive SIJ provocation tests. • Failure of conservative treatment.			
Exclusion Criteria • Active infection. • Coagulopathy. • Pregnancy. • Allergy to steroids. • Severe neurological deficits. • Previous SIJ surgery.			
Procedure All patients underwent fluoroscopy-guided intra-articular SIJ steroid injection under aseptic precautions. Patients were followed at: • 2 weeks • 4 weeks			
www.worldwidejournals.com			
			187

- 8 weeks
- 6 months

Outcome Measures

Primary Outcome

Pain intensity using Visual Analog Scale (VAS).

Secondary Outcome

Functional disability using Oswestry Disability Index (ODI).

Statistical Analysis

Data were analyzed using SPSS version 26.0. Continuous variables were expressed as mean ± standard deviation, while categorical variables were expressed as frequency and percentage. Paired t-test and repeated measures ANOVA were used for comparison. A p-value <0.05 was considered statistically significant.

RESULTS

Table 1. Demographic Characteristics

Variable	Result
Total Patients	50
Mean Age	45.6 ± 10.8 years
Male	22 (44%)
Female	28 (56%)

Table 2. Occupational Distribution

Occupation	Number (%)
Manual Labourer	16 (32%)
Homemaker	14 (28%)
Office Worker	9 (18%)
Driver	7 (14%)
Others	4 (8%)

Table 3. Duration of Symptoms

Duration	Number (%)
3–6 months	18 (36%)
7–9 months	21 (42%)
>9 months	11 (22%)

Table 4. Side of SIJ Involvement

Side	Number (%)
Right	19 (38%)
Left	13 (26%)
Bilateral	18 (36%)

Table 5. Positive Provocation Tests

Test	Positive (%)
FABER	92%
Gaenslen's	84%
Sacral Thrust	82%
Thigh Thrust	78%
Gapping	72%

Table 6. Baseline Scores

Parameter	Mean ± SD
VAS	7.6 ± 1.1
ODI	48.2 ± 9.4

Table 7. VAS Scores During Follow-up

Time	Mean VAS ± SD
Baseline	7.6 ± 1.1
2 Weeks	4.2 ± 1.3
4 Weeks	3.1 ± 1.2
8 Weeks	2.6 ± 1.1
6 Months	2.9 ± 1.4

p < 0.001

Table 8. ODI Scores During Follow-up

Time	Mean ODI ± SD
Baseline	48.2 ± 9.4
2 Weeks	32.4 ± 8.6
4 Weeks	24.8 ± 7.9

8 Weeks	20.6 ± 7.2
6 Months	22.1 ± 8.1

p < 0.001

Table 9. Functional Disability Categories

Category	Baseline	6 Months
Minimal	0	21 (42%)
Moderate	14 (28%)	20 (40%)
Severe	36 (72%)	9 (18%)

Table 10. Sustained Pain Relief

Outcome	Number (%)
Relief at 2 weeks	44 (88%)
Sustained at 6 months	38 (76%)
Partial Recurrence	12 (24%)

Table 11. Patient Satisfaction

Level	Number (%)
Excellent	18 (36%)
Good	20 (40%)
Fair	9 (18%)
Poor	3 (6%)

Table 12. Adverse Events

Complication	Number (%)
Injection-site pain	4 (8%)
Pain flare	1 (2%)
Facial flushing	1 (2%)
Major complications	0

DISCUSSION

The present study demonstrated significant improvement in pain and functional disability following fluoroscopy-guided sacroiliac joint steroid injection. Mean VAS score improved from 7.6 to 2.9 at six months, while ODI improved from 48.2% to 22.1%.

The majority of patients experienced clinically meaningful pain relief within two weeks, and 76% maintained sustained benefit at six months. Patient satisfaction was high, with 76% reporting good-to-excellent outcomes.

The low incidence of complications and absence of major adverse events further support the safety of this intervention. These findings are consistent with previous studies demonstrating that image-guided SIJ steroid injections provide significant short-term and intermediate-term symptom relief and functional improvement in patients with chronic SIJ dysfunction.

CONCLUSION

Fluoroscopy-guided sacroiliac joint steroid injection is a safe, minimally invasive, and effective treatment option for sacroiliac joint dysfunction. It provides significant reduction in pain, substantial improvement in functional disability, high patient satisfaction, and minimal complications. It should be considered an important therapeutic modality in patients with SIJ dysfunction refractory to conservative management.

CONFLICT OF INTEREST

The author declares no conflict of interest.

FUNDING

No funding was received for this study.

ETHICAL APPROVAL

The study was approved by the Institutional Ethics Committee of Index Medical College Hospital and Research Centre, Indore.

AUTHOR CONTRIBUTION

Dr. Ankit Raj Suman, Dr. Adeeb Qureshi, Dr Abhishek Singh Shaktawat: Conceptualization, data collection, analysis, manuscript preparation, and final approval of the manuscript.

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