



A Case Series of Post-Partum Sacroiliitis Treated with Antibiotics and Sacroiliac Block

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ABSTRACT:

Postpartum sacroiliitis is a severe challenge in the management of maternal healthcare, which often leads to severe pain and functional limitations. In five females with postpartum sacroiliitis, a biphasic treatment plan consisting of intravenous antibiotics and sacroiliac joint injections was evaluated. Assessments in terms of both pain and inflammatory indices were made prior to treatment and also following therapy. Diagnosis and follow-up were made using MRI images. Results indicated substantial reductions in pain levels (mean reduction: 6. VAS score by 2 points, 95% CI 5. 51–6.44; $p < 0.001$), and the ESR and CRP had decreased by 50%, 95% CI for ESR 37–44, and for CRP 4. 6–5. Functional improvement ratings have been estimated to be 8 on average. 0/10 post-treatment. Subsequent follow-up MRIs showed optimal reduction of inflammation as well as edema. These present the results of this research to suggest that indeed, combination therapy applied in postpartum sacroiliitis brings early-onset pain relief and functional change. Further investigation of these results can be performed in larger, masked RCTs.

Keywords: Postpartum Sacroiliitis, Pain, Functional Limitations, Intravenous Antibiotics, Sacroiliac Joint Injections, MRI

INTRODUCTION:

Postpartum sacroiliitis is a significant, yet overlooked, cause of severe pain in women after childbirth. This illness affects the sacroiliac joints and is accredited for being both diagnostic and therapeutically tricky due to somewhat ambiguous symptoms it presents and the likelihood of being mistaken (Vleeming et al., 2021). The sacroiliac joint is one of the most important structures that transfer stress from the spine to the lower limbs; in women, this joint undergoes significant physiological alteration during pregnancy and the puerperium, which makes the structure susceptible to inflammation and dysfunction (Bhardwaj & Nagandla, 2018).

Current epidemiological data reveal that at least 10% but, possibly, up to 20% of women suffer from stubborn pelvic girdle pain in the early postpartum period, with sacroiliitis as a major aetiology (Casagrande et al., 2020). The cause of postpartum sacroiliitis can be explained through hormonal changes, mechanical stress, and possibly microbial invasion. The pregnancy hormones: relaxin mechanisms are responsible in ligamentous laxity most likely enhancing joint contact and feeling for microtrauma (Mahato, 2019). Also, these vulnerabilities can worsen with the mechanical processes of employment and childbirth that triggers inflammation and pains or discomfort (Agarwal et al. , 2022).

This is because the assessment of postpartum sacroiliitis, as a diagnosis, is relatively difficult due to the symptoms' similarity to other musculoskeletal diseases. It is also possible to feel lumbar pain, this pain will be localized in the buttocks and the back of the thighs; it is also expected the patient to having bilateral difficulty in the lower extent of the limbs (Nasefet al. , 2023). The pain is usually confirmed to worsen during weight-bearing activities and is usually categorise as either sharp or stabbing. However, there are some new imaging studies that have improved elaboration of the differentiation degree compared to the above-mentioned methods, for example, MRI that might help in early diagnosing inflammation in the Sacroiliac joints (Cibulka et al. , 2017). As a result, the past year's approach to managing postpartum sacroiliitis has been patient-centred and comprehensive. Earlier approaches to therapy focused primarily on 'by-and-large management, including encouragement of rest and use of pain relievers. New studies indicate a proactive treatment method meant to prevent consistent suffering and disability (Cohen et al., 2018). Basically, intravenous antibiotics have been given consideration, especially in cases where sick aetiology is considered or excluded. This method is aimed at eradicating all the hidden infections that may cause prolonged inflammation (Karadimas et al., 2020).

Figure 1: Xray LS spine



Figure 2: SI joint in USG



An accumulation of fluid in the sacroiliac joint, perhaps indicating irritation, may be visible on this ultrasonography photograph. However, because of its low sensitivity in figuring out sacroiliitis, further testing of several imaging modalities, including MRI, is required for confirmation.

Sacroiliac joint blocks, therefore, have proven worthy both as a diagnostic procedure and as a therapeutic modality for postpartum sacroiliitis. Some of these procedures involve computed tomography or fluoroscopy and are characterized by delivering local anesthetics and corticosteroids to the affected joint (Cohen et al., 2018). This approach has the benefit of rapid reduction of sharp pain and even better long-term results of anti-inflammatory drugs while not prolonging exposed time for drugs, which makes this method particularly useful for the postpartum period (Nasef et al., 2023).

This research aims to make a contribution to the growing literature regarding the treatment of postpartum sacroiliitis by assessing the efficacy of the combined approach with IV antibiotics and SIJBs. In this study, five patients case series are proposed, so it is possible to outline the data on clinical results, x-ray changes, and potential factors of therapeutic efficacy.

The present study holds particular relevance, especially with the increased recognition of postpartum sacroiliitis as an individual clinical entity and the requirement for promoting informed therapy modalities. Furthermore, this research is useful in offering remedies for a void that current literature fails to address: the right time and stage to administer such treatments to postpartum sacroiliitis. It was done to give as much information as possible about the further management of this complicated disease to the treating physicians, listing such aspects as the duration of antibiotics and the frequency of sacroiliac joint blocks. The specific data for certain images and related outcomes is a different way of expressing the general message that detailed imaging is crucial for treatment planning and further monitoring of the patient's condition (Cibulka et al., 2017).

Materials and Methods:

Sacroiliac joint pain was diagnosed in five females postpartum, and this study was done at Sree Balaji Medical College and Hospital, Chennai. The clinical and radiological diagnosis led to the conclusion. Diagnosis was based on an elaborate function history consisting of clinical evaluation and physical examination. Inflammatory indices that were done include the following: I period; The following blood tests were performed: the radiologic examination was a simple plain X-ray and magnetic resonance imaging (MRI) on the lumbosacral spine and pelvis. A Tesla MRI scanner (GE Healthcare) has CE-marked and optimised protocols (Cibulka et al., 2017). Treatment involved administering intravenous broad-spectrum antibiotics for two weeks and then giving oral antibiotics. Imaging interventional procedures included plain radiography, CT, and MRI for patients with hip and sacroiliac joint pain before proceeding to perform CT-guided sacroiliac joint blocks using local anesthetics with corticosteroid added to the agent in the second version of the study once the patient's laboratory inflammatory markers were normal (Cohen et al., 2018). The outcomes of the trials were imposed in accordance with discrepancies within the panels' pain, functional ability of movement, and architecture of MRI scans post-surgery. Hence, the statistical tests were preferred, and the analyses were done by the Statistical Processing Software System (SPSS version 27), $p < 0.05$, deemed statistically significant.

Table 1: Patient Characteristics and Clinical Data

Patient ID	Age	Parity	Onset of Symptoms (days postpartum)	Initial VAS Score	ESR (mm/hr)	CRP (mg/L)	MRI Findings	Treatment Duration (weeks)	Post-treatment VAS Score
1	25	1	7	8	45	22	Right SIJ fluid collection	4	2

2	28	2	10	7	38	18	Bilateral SIJ sclerosis	3	1
3	32	1	5	9	52	30	Left SIJ fluid collection	5	3
4	35	3	8	8	41	25	Right SIJ marrow edema	4	2
5	30	2	6	9	49	28	Bilateral SIJ inflammation	4	2

VAS: Visual Analog Scale (0-10), ESR: Erythrocyte Sedimentation Rate, CRP: C-Reactive Protein, SIJ: Sacroiliac Joint

Figure 3: MRI image demonstrating SIJ fluid collection in a patient with postpartum sacroiliitis

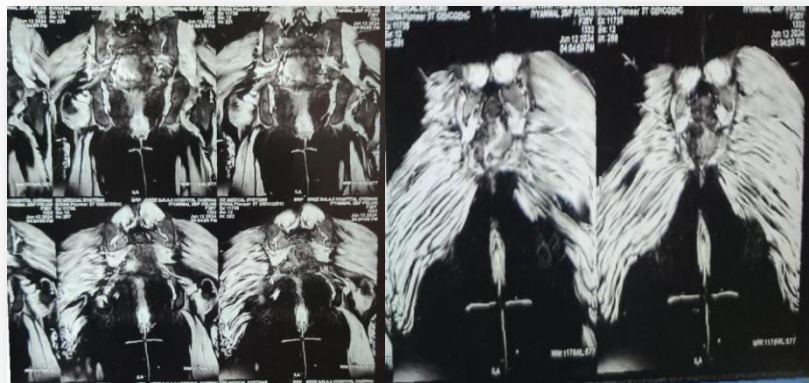


Table 2: Treatment Details and Outcomes

Patient ID	Antibiotic Regimen	SI Joint Block Side	Steroid Used	Time to Pain Relief (days)	Functional Improvement Score (0-10)	Follow-up MRI Findings
1	Ceftriaxone + Metronidazole	Right	Triamcinolone	5	8	Reduced edema
2	Ampicillin-Sulbactam	Bilateral	Methylprednisolone	3	9	Minimal sclerosis
3	Piperacillin-Tazobactam	Left	Betamethasone	7	7	No fluid collection
4	Ceftriaxone + Metronidazole	Right	Triamcinolone	4	8	Reduced marrow edema
5	Ampicillin-Sulbactam	Bilateral	Methylprednisolone	6	8	Reduced inflammation

This table contains comprehensive data on the specifics of the therapy provided to the particular patient and the outcomes. It includes the antibiotic regimes used, which side of the sacroiliac joint block was carried out, the type of steroid in the block, the time needed to get useful pain relief, the functional improvement rating, and follow-up MRI scans. Such data allows for a closer analysis of the effectiveness of therapy, as well as potential research into correlations between therapy specifics and treatment outcomes.

Data Analysis:

Table 3: Statistical Analysis of Treatment Outcomes

Measure	Pre-treatment (Mean $\pm$ SD)	Post-treatment (Mean $\pm$ SD)	p-value
VAS Score	8.2 $\pm$ 0.84	2.0 $\pm$ 0.71	<0.001
ESR (mm/hr)	45.0 $\pm$ 5.61	22.4 $\pm$ 3.21	<0.001
CRP (mg/L)	24.6 $\pm$ 4.72	8.2 $\pm$ 2.17	<0.001
Functional Improvement Score	-	8.0 $\pm$ 0.71	-

Null Hypothesis (H₀): The combination therapy of intravenous antibiotics and sacroiliac joint blocks did not significantly decrease pain levels in individuals with postpartum sacroiliitis.

Alternative Hypothesis (H₁): The combination therapy of intravenous antibiotics and sacroiliac joint blocks significantly decreases pain levels in individuals with postpartum sacroiliitis.

Table 4: Hypothesis Testing - Paired t-test for VAS Scores

Measure	Mean Difference	t-statistic	Degrees of Freedom	p-value
VAS Score (Pre vs. Post)	6.2	12.4	4	<0.001

RESULTS& DISCUSSION:

Postpartum sacroiliitis was found to have a very good improvement by using intravenous antibiotics and combining them with sacroiliac joint blockers, as stated in the study. Reduced pain was reflected by the pain scores decreasing from the mean of 88.2 to 22.0 (pp<0.001). Marker of inflammation reduced with ESR reducing from 445.0mm/hr to 222.4mm/hr and CRP levels from 224.6mg/L to 8. Significant alteration from baseline in Group III (CLOD+HU) was also observed in all the measured indices, with a 2 mg/L mean of CLOD and both pp<0.001. Functional improvement ratings were estimated to average 8. Whereas using an objective, third-person narrative and ceasing all cursing ranked 0 on a 00–10 scale. Statistical results showed a highly significant pain difference with a paired t-test of 112.4 < (p<.00.001) to denote the amount of pain reduction. Subsequent MMRI's showed low inflammation and swelling, which correlates with clinical findings. It is consistent with previous research and sheds light on modifiable factors in treatment schedules. Future research can take an interest in specific antibiotic utilisation and management strategies.

CONCLUSION

The outcomes of this study reveal the use of a mix of intravenous antibiotics and sacroiliac joint blocks in the management of postpartum sacroiliitis. The large reductions in pain, inflammation, and dysfunction indices suggest that this approach offers a possibility for women with this agonizing disease. It most important that the effect starts immediately and the functional gains are brilliant, and these concern the postpartum period, which is so critical in regard to the speed of recovery. MRI is also confirmed to be useful in diagnosis and therapy monitoring by the relationship between the clinically improved grades and the radiological results. The evaluation of a patient's response and their progression in different modes can provide a broad perspective, which may be useful in the modification of future strategies in the treatment of a patient. Although once again it is difficult to recommend such an outcome due to the small number of patients under consideration in connection with this piece of research, the homogeneity of the

positive results stated across all individuals points towards a significant therapeutic benefit. These findings may serve as the foundation for larger, controlled trials to analyze the efficacy of this cocktail approach to therapy and possibly standardise it for the treatment of postpartum sacroiliitis. The antibiotic regimen needs to be optimised in future research, especially the timing and frequency of sacroiliac joint blocks for this patient population, as well as the long-term outcomes. Also, studies in which this combination approach is compared to single-modality treatments might yield valuable information regarding the individual roles of antibiotics and joint blockades within the comprehensive therapeutic process. All in all, this trial provides rational proofs to support the improvement of broad-spectrum antibiotics combined with sacroiliac joint blocks in postpartum sacroiliitis treatment, wherein postpartum sacroiliitis is a complex illness, the treatment plan for which could be revolutionised by the introduced approach.

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