

Sciatica after intra articular corticosteroids injection

By Waleed Jawad Kadhim

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Waleed Jawad Kadhim², Khalid Ahmed Mahmood Aledresi¹, Husham Hasan Jassim²

1 Department of orthopedics, Al-sadder teaching hospital, Basrah, Iraq

2 Department of orthopedics, Basrah Teaching Hospital, Basrah Health Directorate, Basrah, Iraq

corresponding;

Khalid Ahmed Mahmood Aledresi

Basrah, Iraq

Ahmeds201258@yahoo.com

61001

Background: The intra-articular cortico-steroid (IA-CS) injections treatment are still debatable despiting its effectiveness. The failure can cause sciatica which IA-CS injected at the sacroiliac joint (SIJ). The study done to determine non-technical factors that cause recurrent LBP after optimal SIJ IA-CS injections.

Methods: A prospective-clinical study that looked at recurring sciatica variables in cases received intra-articular injection of CS. Cases diagnosed with sciatica according to the IASP criteria. All patients had intra-articular CS injections. The numerical rating scale (NRS) was used for rating the pain in the SIJ on a range of (0-10). The scale was reviewed 3, 6, and 9 months post treatment. Age, gender, BMI, trauma history, long-term standing, NSAID used and knee pain were all documented as an intra-articular injection treatment failure possible factors.

Results: Totally, 50 subjects was enrolled, with a predominant females (60%) than males (40%). The mean of age was 55.8 ± 7.4 years. History of trauma in 60%. Long sitting and standing history presented in 70% and 20%, respectively. The recurrence of sciatica affect 30(60%) patients. The right sciatica affecting more than half of the cases (60%). The vast majority of cases (80%) used NSAID. The pain began within the last three months in 80% of the patients. History of CS injection recorded in 38% of the cases. Lower limb pain reported in 80% of the cases. Cases with and without recurrence had the mean age of 55.9 ± 9.5 years and 50.6 ± 14.9 years, respectively. The SIJ pain recurrence is strongly connected with elderly, and long sitting in logistic regression analysis

Conclusions: Elderly, NSAID utilize, and uni-lateral sciatica involvement are protective factors against SIJ discomfort recurrence.

Key words

intra-articular injection, recurrent sacroiliacjoint pain, SIJ, corticosteroid

INTRODUCTION

Low back pain (LBP) is one of the commonest neurological symptoms [1,2]. Approximately 5-10% of LBP instance will be chronic, leading to sluggish quality of life (QOL), disability and bad economic burden (large cost of management) [1]. A SIJ is a major source of LBP, accounting for 15–30% of cases [2]. The SIJ discomfort can occur in spontaneous manner or due to trauma, incident, and repeated shear [3], by the intra- or extra-articular mechanisms varieties, like strains of ligaments, inflammatory muscles, damage of capsule, infections, fractures and arthritis [3,4]. SIJ dysfunction cause pain at inferior posterior superior iliac spine plus tenderness in the sacral sulci [4], and usually at the postero-lateral thigh, buttocks, low lumbar regions and groins (L4-L5 roots) [3,4]. Management of acute LBP include an administration of NSAIDs and physical therapy. IA-CS injections agents are used primarily when the management fail for resolving LBP [5].

Many studies have estimated the advantages of CS injections [6,7]. Hansen et al. [8] reported that the effectiveness of IA-CS injections were poor. These findings were emphasized by the European Cooperation in Science and Technology (COST) guidelines, that doesn't recommend SIJ IA- CS injections because of a fewer evidence [9, 10].

The study aimed for determining factors that cause recurrent LBP after optimal SIJ IA-CS injections.

METHODS

Study design

A prospective clinical study that looked at recurring sciatica variables in cases received intra-articular injection of CS. Cases diagnosed with sciatica according to the IASP criteria. IASP define sciatica as pain in the SIJ region that is repeatable with provocative maneuvers and that require 50% to 70% of the pain scale to be alleviated with local anesthetic [11]. All patients had IA-CS injection under ultra-sonography guidance and were pain-free for 72 hours post-operation.

Ethics

This study approved by Department of orthopedics, Basrah Teaching Hospital. All patients gave their verbal agreement to participate in the work.

Clinical assessment

A numerical rating scale (NRS) used to rate the pain in the SIJ on a range of (0-10). A "0" scale indicate no pain, while a "10" scale indicate the most severe pain.

Follow-up

The scale was reviewed three, six and nine months post operation. The subject returned with

sciatica complaint on the same side before nine months, it was considered recurring.

Data collection

Age, gender, BMI, time of sitting, ¹trauma, long-term standing, NSAID use and knee pain were ⁸all documented as an intra-articular injection treatment failure possible factors.

Statistical analysis

The SPSS ver. 25 was used to analyzed the findings. Mean values, SD, ⁹frequencies and percentages for nominal and ordinal data used. The independent t-test used to examine the mean difference of variables. The logistic regression models were used. The $p \leq 0.5$ is consider significant.

RESULTS

Females were predominant as 60% of the total. The mean of age was 55.8 ± 7.4 years. History of trauma in 60%. Long sitting and standing history presented in 70% and 20%, respectively. The recurrence of sciatica affect 30(60%) patients. The right sciatica affecting more than half of the cases (60%). The vast majority of cases (80%) ¹²used NSAID. The pain began within the last three months in 80% of the patients. ²History of CS injection recorded ³in 38% ⁴of the cases. Lower limb pain reported in 80% ¹¹of the cases. (Table 1)

Table 1. Demography of cases

No	Variables	No.	%
Gender	Male	20	40
	Female	30	60
BMI	Normal	23	46
	Obese	27	54
Trauma	Yes	30	60
	No	20	40
Long Sitting	<1 hour	15	30
	> hour	35	70
Long Standing	Yes	10	20
	No	40	80
Pain onset	≥ 3 months	10	20
	< 3 months	40	80
NSAID	Yes	40	80
	No	10	20
Lower limb pain (knee)	Yes	40	80
	No	10	20
Sciatica side	Left	20	40
	Right	30	30
CS injection	Yes	19	38
	No	31	62
	Yes	30	60

Recurrent pain	No	20	40
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Individuals with and without recurrence had the mean age of 55.9 ± 9.5 years and 50.6±14.9 years, respectively. The SIJ pain recurrence was strongly associated with aging and long sitting in logistic regression analysis. (Table 2)

Table 2. Logistic regression sciatica

Variable	Recurrent	Not- Recurrent	P Value
	Mean ±SD	Mean ±SD	
Age	55.9 ± 9.5	50.6±14.9	0.08
Sex (M:F ratio)	1.1:1.5	1.2:1.7	0.06
BMI	23.7±7.5	23.8±8.1	0.7
Trauma	22(44%)	28(56%)	0.435
Long Sitting	42(84%)	8(16%)	0.1
Long Standing	18(36%)	32(64%)	0.2
Pain onset	9(18%)	41(82%)	0.09

DISCUSSION

Our data revealed that age is the only element that was sub-stancially linked in the logistic regression pattern and that younger age is a protective factor against sciatica recurrence. The conclusion is due to that the joints degrade with aging. The old age is a well-known risk factor for LBP. Theoretically, age is the major effect in the recurrence of joint discomfort, due to the degenerative processes lead to persistent pain generator [12]. Ziegeler et al. [13] revealed that elderly have a higher risk of acquired degenerative lesions such as sclerosis, osteophytes and joint space changes. The discrepancies in our work explained by the underreporting of pain symptoms in elderly and selection biases, as approximately (78%) of the subjects in this work were aged ≥40 years, which we further subdivided as elderly in the logistic analysis because joint degeneration began to appear prominently in that age group [14].

Recently, the detection of sciatica with dual comparative locally anesthetic blocks positivity was more frequent determined in the elder group than in a negative one, hence older patients were sampled [10].

NSAIDs proposed as conservative (adjuvant) therapy for IA-CS injections in sciatica in many researches. The pathophysiology is the suppressing of the cyclo-oxygenase enzymes (COX), that convert arachidonic acids into thromboxane, PG and prosta-cyclins, which is the major mechanism. NSAIDs have a role in activate nociceptors (responsible for reactions of pain triggered by the inflammation processes) [15]. The connection between uni-lateral participation and milder SIJ severities and non-ankylosing spondylitis [16].

Female gender, greater BMI, pro-longed sitting time and pregnancy are well-known predispose

factors for SIJ pain [17]. Females are more likely than males to complain from severe joint degeneration (SIJ) due to hormonal instability after menopause or pregnancy [18, 19]. A great BMI and long durations of sitting elevating the wear and tear processes and speeding up the degeneration processes [17].

The lack of a connect between these features and sciatica recurrence could be explained by small sample sizes and short follow-up periods, which were insufficient to clarify a recurrence rate. Hawkins et al. concluded that 2/3 of sciatica who received IA-CS injection experienced considerable relieving that lasted up to several months [20].

Conclusion

The elderly, NSAID utilize, and uni-lateral sciatica involvement are protective factors against SIJ discomfort recurrence.

CONFLICT OF INTEREST

None

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