

PRP Versus Local Steroid Injections in Management of Sacroiliac Joint Inflammation

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Abstract

Background: Low back pain is common and originates in the Sacroiliac (SI) joint in 15%-30% of cases. Traditional SI joint disruption/de generative sacroiliitis treatments include non operative care or open SI joint fusion.

Aim of Study: We aim to evaluate and compare the usefulness, side effects and complication of use platelet Rich Plasma (PRP) versus the more commonly used local steroid injection in treatment of sacroiliitis.

Patient and Methods: These study include 18 patient were divided into two group:

- **Group (A):** 30 patients received image guided local inter-articular steroid injection of 2ml methylprednisolone (Depo-Medrol) plus 1ml lidocaine.
- **Group (B):** 16 patients received image guided local inter-articular injection of 3ml PRP plus 0.5ml lidocaine.

The median follow-up 6-12 weeks, evaluating improvement, the need for repeat injection and complication. The extent of pain improvement was evaluated using the visual analogue pain scale (VAS).

Result: Group (A) 24 patient (80%) had complete resolving of symptom while 8 patient in Group (B) had resolution (50%).

Group (A) had one case of sever painful injection site, one case with supreficial infection and two cases who complained of systemic effects of steroids including hiccups and elevated blood sugar levels that improved after one week, while Group (B) had two cases with acute aching pain following the injection and improved the following three days and one case where the procedure had to be redone under CT guidance.

Conclusion: Local steroid for treatment of sacroiliitis more effective in management when compare two local PRP injection but the complication rate is higher and there is more risk in certain groups who do not tolerate steroids like diabetics, hypertensive and old age.

PRP administration is inferior to steroid in management of sacroiliitis in terms of immediate pain relief but is much safer, has less complication and can be repeated safely.

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Key Words: Sacroiliac – Steroid – PRP– Injection.

Introduction

LOW back pain is common and originates in the Sacroiliac (SI) joint in 15%-30% of cases. Traditional SI joint disruption/de generative sacroiliitis treatments include non operative care or open SI joint fusion [1-3].

The Sacroiliac (SI) joint is the largest axial joint in the body, with an average surface area of 17.5cm². The SI joint is most often characterized as a large, auricular-shaped, diarthrodial synovial joint. In reality, only the anterior third of the interface between the sacrum and ilium is a true synovial joint; the rest of the junction is comprised of an interarticular of ligamentous connections [4-6].

The innervation of the SI joint remains a subject of much debate. The lateral branches of the L4-S3 dorsal rami are cited by some experts as composing the major innervation to the posterior SI joint [7-9].

Clinical assessment:

The most common referral patterns for SIJ pain were found to be radiation into the buttock (94%), lower lumbar region (72%), lower extremity (50%) [10,11].

One of the most challenging aspects of treating SIJ pain is the complexity of diagnosis eg, Patrick's test: The heel of one foot is crossed on top of the opposite knee, and the top knee is pressed down to test for hip mobility and pain [12].

Aim of study:

We aim to evaluate and compare the usefulness, side effects and complication of use Platelet Rich

Plasma (PRP) versus the more commonly used local steroid injection in treatment of sacroiliitis.

Patients and Methods

This is prospective study for 46 cases all cases were done in Kasr El-Aini Hospitals, Cairo University and Beni Suef Hospital between February 2013 and June 2015.

These study include 46 patient were divided into two group:

- *Group (A):* 30 patients received image guided local interarticular steroid injection of 2ml methylprednisolone (Depo-Medrol) plus 1ml lidocaine.
- *Group (B):* 16 patients received image guided local interarticular injection of 3ml PRP plus 0.5ml lidocaine.

The median follow-up 6-12 weeks, evaluating improvement, the need for repeat injection and complication. The extent of pain improvement was evaluated using the visual analogue pain scale (VAS).

Results

In our study, 24 patients (51 %) were females while 22 patients (48.8%) were males the mean age for patients was 38 years, 23 patients (50%) were obese, 13 patients (28%) were over weight and 10 patients (21 %) were of normal BMI.

20 patient with previous L5 S 1 fixation, 10 patient with L4-5 fixation, 11 patient with L5 S 1 disectomy and 5 patient without previous history of lumbar surgery.

Group (A) 24 patient (80%) had complete resolving of symptom while 8 patient in Group (B) had resolution (50%).

24 patient in Group (A); 15 patient L5 s1 fixation, 5 patient I4-5 fixation and 4 patient without previous history of lumbar surgery.

8 patient in Group (B); 5 patient L5 s 1 fixation, 2 patient I4-5 fixation and one patient previous with L5 S 1 disectomy.

Group (A) had one case of sever painful injection site, one case with supreficial infection and two cases who complained of systemic effects of steroids including hiccups and elevated blood sugar levels that improved after one week, while Group (B) had two cases with acute aching pain following

the injection and improved the following three days and one case where the procedure had to be redone under CT guidance.

Mean VAS before the procedure 6.7 and after steroid injection was 3 and but after PRP injection was 3.5 this show significant reduction of pain in both groups.

All improved patient follow-up after 6-12 weeks.

Group (A) recurrence of symptom in 2 patient and need to repeated after 4 weeks.

Group (B) recurrence of symptom in also in 2 patient and need to repeated after 3 week.



Fig. (1): X-ray L.s.s show S.I.J (shows erosions in Lt sacroiliac joint).



Fig. (2): X-ray L.s.s show Lt sacroiliac joint injection.

Table (1): Relations between result of both groups.

Line of management	Patients improved	VAS	
		Pre	Post
1- Steroid injection	24 (80%)	6.7	3
2- PRP injection	8 (50%)	6.7	3.5

Table (2): Relations between result of both groups.

Management	VAS		P-value
	Pre (n=8)	Post (n=8)	
<i>1- Steroid injection:</i>			
Range	5-8	2-4	0.001 **
Mean ± SD	6.7±1.03	3.5±0.8	
<i>2- PRP injection:</i>			
Range	5-8	3-4	0.001 **
Mean ± SD	6.7	3.5	

Discussion

This study aimed to evaluate and compare the usefulness, side effects and complication of use Platelet Rich Plasma (PRP) versus the more commonly used local steroid injection in treatment of sacroiliitis.

In our study, the mean age for patients that had sacroiliac joint dysfunction was (38) years old, lower than the study of Maigne et al., [1,2] who reported the age mean age of 48 years old.

In our study, out of the patients who developed sacroiliac joint dysfunction 23 patients (50%) were obese (30-35), 13 patients (28%) were over weight and 10 patients (21%) were of normal BMI; this result is similar to Depalma [9] who reported when BMI was 30 or 35kg/m², it was found that BMI is an important risk factor that may lead to sacroiliac joint pain.

In our study, we used VAS for clinical assessment and pain provocation tests to assess sacroiliac joint dysfunction like: Sacral Patrick test, Liliang et al., [11] reported that pain provocation tests and SIJ block are enough for diagnostic evaluation of sacroiliac joint, De Palma et al., [9] also used pain provocation tests and SIJ blocks for diagnostic evaluation of sacroiliac joint dysfunction while Ha et al., [12] (2008) used VAS for clinical assessment and imaging by CT.

In our study 20 patient (43%) with previous L5 S 1 fixation, 10 patient (22%) with L4-5 fixation, 11 patient (24%) with L5 S 1 disectomy and 5 patient (11%) without previous history of lumber surgery this indicated incidence of occurrence with lumbosacral fixation more than lumber fixation more than lumber disectomy, this result is a little lower than Depalma et al., [9] who reported sacroiliac joint dysfunction in 58.8% of patients with sacral fusion and 18.2% of patients with no sacral fusion.

In our study, Group (A) 24 patients (80%) had complete resolving of symptom while 8 patient in Group (B) had resolution (50%).

24 patients in Group (A); 15 patients L5 S 1 fixation, 5 patient I4-5 fixation and 4 patient without previous history of lumber surgery.

8 patients in Group (B); 5 patients L5 S 1 fixation, 2 patient I4-5 fixation and one patient previous with L5 S 1 disectomy.

The result of Group (A) was higher than Liliang et al., [11] who reported that 66.7% of patients experienced greater than 50% pain reduction for more than 6 weeks by SIJ blocks, but the same result collected by Group (B) (50% improvement) while Katz et al., [9] reported that 59% of pts had 75% pain relief 15-45 minutes after injections and were thus diagnosed with SI joint pain.

Conclusion:

Local steroid for treatment of sacroiliitis was more effective in management when compared to local PRP injection but the complication rate was higher and there was more risk in certain groups who do not tolerate steroids like diabetics, hypertensive and old age.

PRP administration is inferior to steroid in management of sacroiliitis in terms of immediate pain relief but is much safer, has less complication and can be repeated safely.

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مقارنة استخدام البلازما الغنية بالصفائح بالكورتيزون الموضعي في علاج التهاب المفصل العجزي الحرقفي

تعد آلام أسفل الظهر من أكثر الأعراض شيوعاً، وتنتج من المفصل العجزي الحرقفي في ١٥-٣٠٪ من الحالات. العلاجات التقليدية لالتهابات المفصل العجزي الحرقفي تتضمن العلاج الغير جراحى أو جراحة تثبيت المفصل.

نهدف لتقييم ومقارنة الإستفادة، الأعراض الجانبية، والمشكلات من إستخدام البلازما الغنية بالصفائح بالمقارنة مع إستخدام الكورتيزون بالحقن الموضعي الأكثر إنتشاراً لعلاج التهابات المفصل العجزي الحرقفي.

الأساليب: هذه الدراسة تتضمن ١٨ مريضاً تم تقسيمهم إلى مجموعتين،

• المجموعة (أ): ٣٠ مريضاً تلقوا حقناً موضعياً داخل المفصل بمساعدة الأشعة التصويرية ب ٢ مليلتر من الميثايلبريدنيزولون (ديبو ميدرول) بالإضافة إلى مليلتر واحد من الليدوكاين.

• المجموعة (ب): ١٦ مريضاً تلقوا حقناً موضعياً داخل المفصل بمساعدة الأشعة التصويرية ب ٢ مليلتر من البلازما الغنية بالصفائح بالإضافة إلى نصف مليلتر من الليدوكاين.

المتابعة لمتوسط ٦-١٢ أسبوعاً مع تقييم التحسن، الإحتياج لإعادة الحقن والمشكلات. درجة التحسن تم تقييمها بإستخدام المقياس النظرى للآلم.

النتائج:

المجموعة (أ) ٢٤ مريضاً (٨٠٪) حدث لهم تراجع تام للأعراض بينما ٨ مرضى (٥٠٪) حدث لهم تراجع تام للأعراض فى المجموعة (ب).

المجموعة (أ) كانت فيها حاله واحدة لآلام مبرحة فى موضع الحقن، حالة واحدة لالتهاب سطحي وحالتين تعرضوا لمشكلات الحقن العام للكورتيزون متضمنة الزغطة وإرتفاع سكر الدم مع تحسن هذه الأعراض خلال أسبوع. المجموعة (ب) كان لديها حالتين من الآلم الحاد بعد الحقن والذي تحسن خلال ثلاثة أيام وحالة واحدة تم إعادة الحقن بإستخدام التصوير بالأشعة المقطعية.

الخلاصة:

الكورتيزون الموضعي لعلاج التهاب المفصل العجزي الحرقفي أكثر فعالية فى العلاج بالمقارنة بالبلازما الغنية بالصفائح ولكن المشكلات الطبية أكثر وهناك بعض المجموعات أكثر تعرضاً للخطر مثل مرضى السكر والضغط وكبار السن.

البلازما الغنية بالصفائح أقل من الكورتيزون كعلاج لالتهاب المفصل العجزي الحرقفي فيما يتعلق بالتخفيف المباشر للآلم ولكنها أكثر أماناً، ولديها مشكلات أقل ومن الممكن تكرار حقنها بأمان.