



COMPARATIVE STUDY OF EFFICACY OF UST VERSUS LOCAL CORTICOSTEROID INJECTION IN THE TREATMENT OF RETROCALCANEAL BURSTITIS

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ABSTRACT

Retrocalcaneal bursitis (RCB) is a common cause of heel pain. Repetitive pressure & shearing force causes inflammation of the bursae. Our study aims to compare the efficacy between Ultrasound therapy (UST) and Local corticosteroid injection in the management of RCB. This Prospective study was done at the Apex Medical Institution, Kolkata over a period of one year. Patients suffering from RCB with duration more than 6 weeks were included in our study. After randomisation patients are divided into two treatment groups (Group A & B) receiving UST & local corticosteroid injection respectively. Outcome was measured with VAS (Pain) and FFI (Foot function Index) over a period of 12 weeks. At the end of study it is seen that both UST and local corticosteroid injection are effective mode of treatment for RCB but effects of corticosteroid injection are prolonged as compared to UST.

KEYWORDS : Retrocalcaneal bursitis, Corticosteroid injection, UST

INTRODUCTION

Retrocalcaneal bursitis is a common cause of posterior heel pain. Sometimes times it may be so severe that it can interfere with activities of daily life.¹ Retrocalcaneal bursa, located between the posterior surface of the calcaneus & the Achilles tendon is often liable to inflammation. Multiple treatment options like Physical modalities, Exercise therapy, shoe modification, local corticosteroid injection, Orthosis etc are available² but few supportive literature for comparative studies of different mode of treatment are available. This study aims to compare the role of UST and local infiltration of steroid injection for its treatment.

MATERIALS AND METHODS

This Prospective Randomized Analytical study was done at the Apex Medical Institution, Kolkata over a period of one year. Patients presenting with Heel Pain diagnosed as Retrocalcaneal bursitis with duration more than 6 weeks are included in our study. Patients unable to give consent, congenital heel deformity, active infection, conditions where local corticosteroid injection and UST are contraindicated and peripheral vascular diseases are excluded from our study.

Study Design: Prospective Randomised Analytical Study.

Randomization: Patients diagnosed as Retrocalcaneal bursitis primarily by history, clinical examination and supportive investigation like straight x-ray of heel and USG. Total number of patients of our study 23(N=23). They are randomly divided into two treatment Groups [Group A(n=12) and Group-B(n=11)] and total number of visit for each patient was 3 [one initial visit(visit-1), two follow up visits at 6 week(visit-2) and 12 week (visit-3) after the initial visit]

INTERVENTION: Patients were given following treatment-

Group A - Ultrasound Therapy (0.5 W/Cm² pulsed (1:4) locally for 6 minutes, 6 days /week for 2 weeks at initial period.

Group B- local Corticosteroid Injection (INJ) two doses of Injection corticosteroid (triamcinolone-20 mg) with local anaesthetic agent (0.5 ml of 2 % lignocaine) given at 0 & 2wks Patients of both these groups got some basic management which include Exercise Therapy, Shoe modification (Heel elevation, lowering heel counter), Patient education (avoidance of bare foot walking, wearing of proper shoes) & weight reduction on the basis of BMI.

Assessment:

Patients was assessed on a Visual Analogue Scale (VAS) & Foot Function Index³ (FFI) at each visit.

Outcome measures

After completion of study all the available data were analyzed to reach the objective of the study. Software used STATISTICA version 6 [Tulsa, Oklahoma: StatSoft, Inc.; 2001] and GraphPad Prism version 4 [San Diego, California: GraphPad Software Inc.; 2005] were used.

RESULT AND ANALYSIS

Data collected in our study were analyzed using appropriate statistical tests and results obtained. Helps of statistical charts and diagram was also taken to represent statistical data.

Sample size: Total no of patients included in our study was 23(n= 23), divided into two groups(Gr A- 12 & Gr B-11). Unfortunately one patient of treated with UST did not come for further follow up.

Distribution of Age -

In our study the youngest patient was 19 years and the oldest was aged 56 year with a mean age of 34.86 years. Maximum patients are age group between 41-50 years followed by 21-30 yrs.

Distribution of sex: (Figure 1)

In our study 14 (60.86 %) patients are male and 9 (39.13%) patient are female with a male - female ratio is 1:0.64

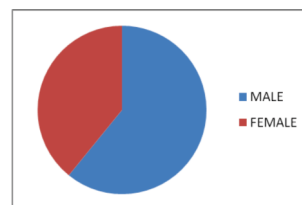


Figure-1 Distribution of sex

Distribution of Occupation

In our study persons with different occupation are suffering from RCB which includes People doing house hold work, Students involved in sports activities, persons whose works demand prolonged standing, office worker, agricultural work etc

Distribution of BMI- Mean BMI 25.33 (range 20.1- 30.2)

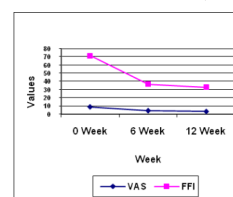


Figure 2. Improvement of VAS & FFI In Group A

In our study the improvement of VAS and FFI score occur throughout the follow up period of 12 weeks when RCB patients are treated with UST but improvement is more in 1st half of follow up.

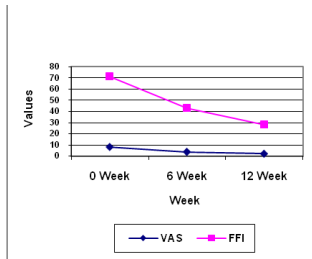


Figure-3 Improvement of VAS & FFI in Group

In our study improvement of VAS and FFI in patients treated with local corticosteroid injection throughout the follow up period of 12 weeks.

In our prospective analytical study group A (UST) shows improvement of VAS at 6 weeks (p value < 0.001) and 12 weeks (p value < 0.001) as compared to 0 week. But the improvement pattern of VAS from 6wks to 12 wks (p value > 0.05) is not statistically significant. In our study FFI score which was also decreased significantly during the first 6 wks (p value < 0.001) in UST group (RCB). Effect of UST on improvement of FFI thereafter is not statistically significant (p value > 0.05). Local infiltration of corticosteroid injection is effective to improve both VAS score (p value < 0.001) throughout the follow up period up to 12 weeks when local steroid injection is used RCB. It is also seen that improvement of FFI score occurs throughout the follow up period up to 12 weeks (p value < 0.05).

DISCUSSION

In our study group mean age of presentation was 34.86 yrs with a minimum age range of 11 yrs - 56 yrs. which is comparable with Patric F Foye² who mentioned that calcaneal bursitis is more common in middle aged and elderly person. The study included 23 patients of which 14 patients were male (60.86%) and 9 were female (39.13 %) patients. It is as per Tureks text book of 'orthopaedics- principles

and their applications³ where RCB is more common in male . In our study the mean BMI of 23 patients is 25.33 (range 20.1-30.2) which suggest a correlation between RCB with increased body weight.

According to literature review^{2,4} postcalcaneal bursitis should be treated conservatively with NSAIDs, exercise therapy, shoe modification, different Physical modalities and local corticosteroid injection . According to Jackson C Tan⁵ the first step in treating bursitis is the foot wear modification with ice compression & NSAIDs. But Turek⁵ recommend local corticosteroid injection.

Interestingly it was seen that UST is definitely effective to relieve pain as documented by improvement of VAS at 6 weeks (p value < 0.001) and 12 weeks (p value < 0.001) as compared to 0 week. But the improvement pattern of VAS from 6wks to 12 wks is not statistically significant (p value > 0.05) according to the data of our study. More or less similar finding was observed with respect to improvement pattern of FFI score which was also decreased significantly during the first 6 wks. (p value < 0.001) . Effect of UST on improvement of FFI thereafter is not statistically significant (p value > 0.05) .

Therapeutic effect of UST in patients with RCB is at initial part of treatment and is not long lasting. On the other hand improvement of pain (VAS) and function (FFI) in patients with

RCB due to local infiltration of injections are more consistent till the end of our follow up at 12 wks and statistically significant(p value < 0.001 & < 0.05 respectively) at the end of the study.

CONCLUSION-

In our present series of 23 patients of RCB they are divided into 2 treatment groups At the end of the study it was concluded that both UST & local corticosteroid injections are helpful for relief of RCB symptoms but the effect of UST in patients with RCB is not long lasting.

REFERENCES

1. Albridge T. Am. Fam physician 2004 July 15; 70(12):332-338
2. Frontera W R, Silver J K. Essentials of Physical Medicine and Rehabilitation. 2nd edition. Philadelphia. Saunders Elsevier; 2008:415-420
3. FFI- Budiman Mak E, Conrad KJ, Roach K. The foot function index: A measure of foot pain and disability. Clin Epidemiology. 4 (6) : 561 - 70, 91.
4. Foye PM, Stitik TP. Calcaneal Bursitis. emedicine.medscape.com/article/307562 updated on 04.05.2008
5. Turek SL. Orthopaedics- principles and their applications. 4th edition. Indian edition. New Delhi. Jaypee brothers; 1998: 1472-1482
6. Thomas JL, Christensen J C, Kravitz S R, Mendicino R W, Schubert J M et al. The Diagnosis and Treatment of Heel Pain: A Clinical Practice Guideline-Revision 2010 Journal of Foot and ankle surgery 49(2010)s1-s19
7. Tan J C. Practical Manual of Physical Medicine and Rehabilitation. 2nd edition. Elsevier Mosby; 2006:420-427