Interferon Alpha -2b in plantar fasciitis

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Abstract

Background: Plantar fasciitis is the most common cause of heel pain but treatment remains empirical.

Objective: To investigate the effect of interferon alpha 2b on pain, morning stiffness and tenderness of heels in patient with plantar fasciitis.

Methods: Three hundred seventy six patients with plantar fasciitis enrolled in this study. The patients divided into two groups: Group one received interferon alpha 2b 3MIU\evry 3days and group two treated with diclofenac. 50 mg two times daily with heel pads. The study conducted for 12 week.

Results: 92% of group one patients who received interferon alpha 2b became completely asymptomatic at week 6. At week 12 96.8% became completely free of symptoms.

Conclusion: Treatment with interferon alpha 2b in patients who had plantar fasciitis seems to be effective bringing complete cure

Key words: interferon alpha 2b, planter fasciitis

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Introduction

Plantar fasciitis is the most common cause of heel pain .It is the consequence of biochemical faults that cause tension of the intrinsic muscles and of the plantar fascia at its insertion to the calcaneus. Classically the patient complains of heel pain on first arising and after a period of rest symptoms diminish with walking [1,2].

Pain and tenderness are maximal at the point of insertion of fascia into the medial tubercle just anterior to the weight- bearing area of the heel or extend distally along the fascia as it courses to the toes; the foot usually appears to be normal[3]. Over time and with repetitive stress micro tears can occur in the origin of the plantar fascia generating inflammatory response consisting of collagen necrosis hyperplasia and matrix calcification. Most patients have calcaneal spurs but some do not. Plantar fasciitis refers specifically to the clinical syndrome of pain, inflammation and fibrosis of the plantar fascia and its calcaneal insertion. Stress along the plantar fascia is increased with obesity, over use and inappropriate footwear[3,4].

Diagnosis of plantar fasciitis is based on history, examination and imaging technique. Pain and morning stiffness, involving the heel and plantar surface of the foot. Examination shows local tenderness over the anteromedial portion of the plantar surface of the calcaneous with worsening of pain on passive dorsiflexion of the toes[5].

Radiography is of little value in the diagnosis but is important to rule out other disorders[6].

The presence of infracalcaneal heel spurs on radiographs correlates poorly with symptoms. The plantar fascia can be seen on a satisfactory conventional lateral radiograph[7].

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MRI is of great value in defining soft tissue abnormalities showing thickening of plantar fascia or calcaneouse [8, 9].

Histopathology of plantar fsciitis is characterized by collagen degeneration angiofibroblastic hyperplasia chondroid metaplasia and calcification of degenerated matrix. Therapy consists of resting, unloading and stabilizing foot. Nonsteroidal anti-inflammatory drugs diminish the pain and stiffness but are not curative. Splinting, casting and orthotics can be considered[10].

Heel pad or cushion application of local heat and local injection of corticosteroids at the insertion of the plantar fascia may be used. Surgical approaches such as fasciotomy and spur excision are infrequently used[11,12].

Methods

This study was conducted in Alkadymia Teaching Hospital in Baghdad during the period from 18th September 2006 to17th November 2006, 376 patients enrolled in this study .352 women (93.6%) and 24 men (6.4%) Their age rang {21-74} years mean 43 years. Disease duration was (6+_2months) with heel pain diagnosed according to the history, examination and radiographic findings.

Subjects who enrolled in the study underwent routine biochemical blood analysis in order to exclude other diseases. All diabetic patients had been excluded from the study. X-ray of the feet were obtained in all patients

Evaluation of subjects includes physical examination, which has particular focus on the pattern of feet involvement. Patients were divided into two groups: Group one composed of 188 patients treated with interferon alpha 2b 3MIU {3milion international units MIU} every 3days and 50mg diclofenac two times daily.

Group two treated with diclofenac 50m twice daily with heel pads. Statistical analysis was done application of student's t test

Patients were included irrespective of past or present treatment {nonsteroidal anti-inflammatory drugs, NSAID's or disease modifying anti-rheumatic drugs DMARD's}.

We examined all heel -x-rays reports that stated either normal or a calcaneal spure. All patients were assessed carefully. At the first visit the patient is asked about the duration of symptoms. The heels are examined for the presence of injury, soft tissue swelling and tenderness.

Inclusion criteria were:

1- Pain and morning stiffness involving the heel and plantar surface of the foot

2- Local tenderness of the plantar surface of the calcaneous

3- Worsening of calcaneal pain with passive dorsiflextion of the toes

4-Other diseases like fractures or diabetes mellitus…. Etc…should be excluded.

Written consent was obtained from each subject prior to treatment.

Clinical examination of the patients was carried out at intervals of 2weeks.

The outcome and satisfaction with therapy i.e. relief of symptoms and signs of the disease was taken as a pointer to the efficacy of therapy.

Results

After a week 12 patients left the study because of the unability to attend the follow up clinic or because of the side effect of interferon {fever, rigor, myalgia}. Following treatment with interferon alpha 2b improvement was seen in 92% {162 patiens} in 2weeks and 4 weeks follow up. However 85% {150 patients} were completely

Asymptomatic at week 6. 16 patients showed improvement in pain severity but continued to have mild pain and stiffness .4.8% {9 patients} who had partial improvement they became

completely free of symptoms at week 12 raising the number to 96.8%. No major adverse effects has been observed due to interferon alpha 2b except certain symptoms developed in 18 patients which are {fever , myalgia and rigor} treated successfully with one gram acetamenophen .In group two {Diclofenace group} they did not show any improvement in their symptoms. The pain and morning stiffness continued and the local tenderness of the heel was the same.

Discussion

The severity of symptoms before and after therapy is very important. There was a substantial decline in severity in group one {interferon group} in comparison with group two who received diclofenac only. The results observed in the present study demonstrate that complete disappearance of symptoms and signs of plantar fasciitis can be achieved with interferon alpha 2b. It is believed that direct anti-proliferative action, inhibition of virus replication and modulation of the host immune response play important role s in its function(13).

Interferon alpha 2b has been shown to posses many of the activities of natural human alpha- interferon preparations(14).

The inteferons are family of naturally occurring small proteins and glcyoproteins produced and secreted by cells in response to biological inducers. They exert their cellular activities by binding to specific membrane receptors on the cell surface(15).

Once bound to the cell membrane interferons initiate a complex sequence of intracellular events these include the induction of modulating activities such as enhancement of the phagocytic activity of macrophages and augmentation of the specific cytotoxisty of lymphocytes for target cells .Any of these activities might contribute to interferon alpha 2btheraputic effects(16,17).

Interferon alpha 2b is very effective drug in the treatment of plantar fasciitis.

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