



DEMOGRAPHIC PROFILE OF PLANTAR FASCIITIS PATIENTS IN A TERTIARY CARE CENTRE

Rheumatology

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ABSTRACT

Background: Plantar fasciitis is the most common cause of heel pain. Plantar fasciitis represents 80% of heel pain and about 8 to 10% of runner-related injuries which commonly affects all ages with a peak occurrence between 40-60 years with an equal prevalence in males and females in younger ages.

Methods: It is an observational Cross-sectional study to know the Demographic Profile of Plantar Fasciitis Patients in a Tertiary Care Centre. Study includes total of 40 patient of plantar fasciitis fulfilling the inclusion criteria (diagnosed case of plantar fasciitis, age 18 year and above) were enrolled after rule out of exclusion criteria (previous lower limb surgery and fracture, lower limb nerve injury, arthritis, peripheral vascular disease, other cause of foot pain and deformity of lower limb).

Results: Mean age group was 35.3 ± 8.6 years, 23 were male and 17 were female. In the study 24 had involvement of right foot and 16 had involvement of left foot

Conclusion: Majority of patient lies under adult population especially under 26-35 years of age which may be due to high impact activity in daily life.

KEYWORDS

Plantar fasciitis, Plantar Fascia, Heel Pain, Demography

INTRODUCTION

Plantar fascia is a fibrous, broad tendon like structure which is flat and comprise non-contractile irregularly spread collagen fibres. It starts from medial calcaneal tuberosity and divides distally in superficial and deep segments and gets embedded in skin, transverse metatarsophalangeal ligaments and plantar surface of proximal phalanx.¹

Plantar fascia is made up of 3 parts: Medial, Central, and Lateral bands. The central portion is the thickest and strongest, and this section is additionally the foremost likely to be involved with plantar fasciitis. In normal circumstances, plantar fascia acts via windlass mechanism and provide stability to medial longitudinal arch.² plantar fascia prevents foot collapse due to its anatomy and tensile strength. Plantar fascia provides a tension bridge in the foot, and give both static support and dynamic shock absorption.³

Most common cause of heel pain is plantar fasciitis, which is a degenerative process of the plantar fascia. The issue happens when the ligament is under constant stress and stretch such as flat feet or tightness of fascia, ligament begins to tear off from its origin in the heel bone, and several small tears, plantar fascia develops inflammation leading to the condition plantar fasciitis.⁴ Patient encounters insidious onset of pain at the bottom of feet, especially around heel. The pain starts with first few steps after resting.

Plantar fasciitis represents 80% of heel pain and about 8 to 10% of runner-related injuries which commonly affects all ages with a peak occurrence between 40-60 years with an equal prevalence in males and females in younger ages.⁵ It is occur in 10% of the general population.²

It has appeared to be related with biomechanical variations in the foot such as a tight Achilles tendon, pes cavus and pes planus.⁶ Obesity along with improper footwear is a cause of heel pain. Calcaneal spur aggravates the heel pain. Decreased ankle dorsiflexion, the sum of time went through standing and walking, and standing on hard surfaces are also included as risk factors for plantar fasciitis.⁷ It has been proposed that plantar fasciitis is additionally related with both cavus⁸ and planus⁹ foot posture as these posture increase strain on plantar fascia and repetitive prolonged strain generate micro tear in plantar fascia.

Plantar fasciitis is a self-limiting condition it takes 6 to 18 months for resolution.¹⁰ Treatment of plantar fasciitis includes patient education, contrast bath, electric modalities, massage, taping, stretching, strengthening, extra-corporeal shock wave therapy, nonsteroidal anti-inflammatory drugs (NSAIDs), rest and activity modification, local corticosteroids, local anaesthetics, local platelet rich plasma, local botulinum toxin type A injection, splinting, shoe modifications, and orthoses and surgery in severe cases. Shoe modifications and orthosis for the treatment of plantar fasciitis are directed towards correction of

foot posture which may be a contributory factor in the causation of plantar fasciitis. Prefabricated and custom molded orthoses provides improvements in function and reduce pain in plantar fasciitis.¹¹ Foot orthoses reduce foot pronation, collapse of the longitudinal arch, and symptoms of plantar fasciitis by reducing strain in the fascia during standing and ambulation. Night splints maintain a neutral 90° foot-leg angle and provide constant passive stretching of the Achilles tendon and plantar fascia.

METHODOLOGY

It is an observational Cross-sectional study to know the Demographic Profile of Plantar Fasciitis Patients in a Tertiary Care Centre. This study was conducted in department of Physical Medicine and Rehabilitation of a tertiary care hospital. Study includes total of 40 patient of plantar fasciitis fulfilling the inclusion criteria (diagnosed case of plantar fasciitis, age 18 year and above) were enrolled after rule out of exclusion criteria (previous lower limb surgery and fracture, lower limb nerve injury, arthritis, peripheral vascular disease, other cause of foot pain and deformity of lower limb). One symptomatic foot was considered as one case. Diagnosis was confirmed on the basis of history and clinical examination. The data was analysed using Statistical Package for Social Sciences (SPSS) version 21.0. Categorical variables were presented in number and percentage (%) and continuous variables were presented as mean $\pm$ SD and median.

Ap value of <0.05 was considered statistically significant.

RESULTS

A total 40 patient in study group were analysed for age, sex and side involvement. Patient with plantar fasciitis included in the study ranged from 18 year to 55 years of age. Majority of patient enrolled in study were 26 to 35 years of age group. Equal number of sex matched controls were enrolled in each age group. Mean age of case group was 35.3 ± 8.6 years. About 50% lie in 26 -35 year of age group and only 5% patient lies in 46 -55 year of age group but the maximum bulk of diagnosed patient 75% lies in 26 -45 year of age.

Out of 40 patient enrolled in the study 23(57.50%) were male and 17 (42.50%) were female.

In the study 24 (60.00%) had involvement of right foot and 16 (40.00%) had involvement of left foot.

Table 1: Distribution of patient over various age group

Age in years	No. of Cases
≤ 25	4 (10.00%)
26-35	20 (50.00%)
36-45	10 (25.00%)

46-55	6 (15.00%)
Total	40 (100.00%)

Table 2: Gender wise distribution

Gender	Percentage of Cases
Female	42.50%
Male	57.50%
Total	100.00%

Table 3: Distribution as per side involvement

Side Involvement	Percentage of Cases
Left	40%
Right	60%
Total	100.00%

DISCUSSION

Plantar fasciitis is the most common cause of heel pain which is a degenerative process of the plantar fascia. The problem occurs when the ligament is under constant stress and stretch such as with flat feet or tightness of the fascia, ligament begins to tear off from its origin in the heel bone and after several small tears, plantar fascia develops inflammation leading to the condition plantar fasciitis.

Treatment of plantar fasciitis includes patient education, rest, activity modification, contrast bath, electric modalities, massage, taping, stretching, strengthening, extra-corporeal shock wave therapy, nonsteroidal anti-inflammatory drugs (NSAIDs), local corticosteroids, local anaesthetics, local platelet rich plasma, local botulinum toxin type A injection, splinting, shoe modifications, Night splints, orthoses and surgery in severe cases.

The purpose of the study to know the Demographic Profile of Plantar Fasciitis Patients in a Tertiary Care Centre. In our study the mean age of study group was 35.3 ± 8.6 years which stated that plantar fasciitis found in adult population and Majority of patient (50%) lies in 26 - 35 year of age group. In a study by Reda A et al.⁵ the same was reported to be 42.7 ± 12.66 . In another study Rano et al. found the mean age of patients with plantar fasciitis to be 45.1 ± 2.2 .¹²

Out of 40 patient enrolled in study, number of female patient was 17 (42.5%) and male patient 23 (57.5%). In a study of Reda A et al.⁵ founds 56.4% was male.

In our study, right side (60%) was predominantly involved as compared to left side (40%). However, in the literatures reviewed, there was no study that showed right or left side predominance in plantar fasciitis.

CONCLUSION

Findings of our study reveal relationship between occurrence of plantar fasciitis and various demographic factors such as age, gender and side of the foot involved.

Majority of patient lies under adult population especially under 26-35 years of age which may be due to high impact activity in daily life.

Predominantly Males were affected which may be very well explained because men are usually involved in heavy professional activity.

Right foot was more commonly involved which could be because of general tendency to use right lower limb for first step after rest and/or right foot being more used in vehicle driving.

However, studies including larger number of subjects are warranted for further consolidation of our findings.

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