

A Holistic Review of the Etiology and Treatment of Plantar Fasciitis Based on Unani and Modern Perspectives

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Abstract

Review Article

Background: Plantar fasciitis (PF) is a frequent cause of pain in the heel, which affects posture, mobility, and quality of life. It is now understood as a degenerative disorder and not an inflammatory one. In *Unani* medicine, pain in the heel falls under the category of *Waja-ul-Mafasil* and is related to humoral disturbance and morbid matter deposition.

Objective: To present a comparative and integrative analysis of plantar fasciitis from the both modern biomedical and Unani perspectives with emphasis on its etiology, pathophysiology, diagnosis, and treatment. **Methods:** A descriptive and comparative review of literature from both the modern biomedical literature and classical Unani literature was carried out. This comprised epidemiological findings, risk factors, diagnostic criteria, and treatment protocols. **Results:** Current medicine recognizes mechanical overload, obesity, foot abnormality, and prolonged standing as main risk factors for PF. Diagnosis relies on clinical history and physical examination with the Windlass test facilitating confirmation. Treatment involves NSAIDs, orthotics, physiotherapy, and corticosteroid injections or surgery in certain cases. In *Unani* medicine, PF (*Waja al-'Aqab*) is considered a product of imbalanced temperament (*Sue Mizaj*), retention of morbid matter (*Ehtebase Madda*), and compromised innate heat (*Zaeef Hararat*). The diagnostic process is based on pulse diagnosis, examination of urine, and symptomology. Treatment comprises *Ta'deel-e-Mizaj* (correction of temperament), *Tanqiya-e-Madda* (evacuation of morbid matter), cupping, venesection, massage, herbal treatments, and modification of lifestyle based on temperament. **Conclusion:** Both *Unani* and contemporary systems recognize the multifactorial etiology of plantar fasciitis and the causative role of chronic stress in its development. An integrated treatment strategy combining evidence-based biomedical therapy with Unani principles has the potential to provide holistic and personalized care, leading to favorable outcomes in treatment of patients with plantar fasciitis.

Keywords: Plantar fasciitis (PF), Unani medicine, Waja-ul-Mafasil, Waja al-'Aqab, Sue Mizaj, Ehtebase Madda, Zaeef Hararat, Ta'deel-e-Mizaj, Tanqiya-e-Madda.

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INTRODUCTION

Plantar fasciitis (PF) is a common foot disorder with significant effects on posture, mobility, and quality of life. PF is characterized by medial heel pain, especially during weight-bearing or after rest. While in the past it has been termed as an inflammatory condition, present studies acknowledge PF as a degenerative disease, [1] also referred to as "plantar fasciosis" or "fasciopathy." [2,3] PF is also known as painful heel syndrome, heel spur syndrome, runner's heel, "policeman's heel." [4] or calcaneodynia [5,6,7]. Both athletes and sedentary individuals are impacted because of repeated overload of the plantar fascia by either exercise or daily activity.[6]

In Unani, heel pain is referred to as *Waja 'al-'Aqab* (وجع العقب) or *Nozulul Ma*, i.e., fluid collection leading to pain. ^{8,9}Samarqandi described it as pain interfering with walking or standing.[10]

Ibn Sina included it under *Waja-ul-Mafasil*, which includes joint ailments like gout and sciatica. Zakariya Razi wrote that the disease manifests frequently on account of retention of excessive moisture (*Ratubat*). Alama Najeeb-ud-Din Samarqandi and Alama Nafees described the condition as pain and inflammation of the joint and peri-articular structures, [11,12] while Ismail Jurjani paid special emphasis to the causal role of morbid matter in joint pain. This traditional knowledge complements modern knowledge and gives a broader

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view of PF. This disease falls under the broader disease category of *Waja-ul-Mafasil* (pain in the joints) and is symptomatic of imbalanced humors, retention of moisture, and troubled temperament.[12]

Epidemiology, incidence and prevalence:

Plantar fasciitis (PF) is one of the most common musculoskeletal (MSK) complain of the foot as it accounts for about 80% of cases of heel pain. [6] Approximately 10% of the general population will

experience plantar fasciitis during their lifetime. [13,14] Individuals aged 45–64 years exhibit the highest prevalence at 1.33%, while those aged 18–44 years have a prevalence of 0.53%. Females have a higher prevalence (1.19%) compared to males (0.47%).[15]

Etiology /risk factor of heel pain:

The etiology of plantar fasciitis is multifactorial. The most common risk factors associated with plantar fasciitis are categorized as-[16-18]

Category	Modern Medicine	Unani Medicine
Intrinsic Risk Factors [4,7]	1. Anatomical: <ul style="list-style-type: none"> Obesity (BMI > 25 kg/m²) [21] Flat feet (Pes planus) [7,20,21] High-arched feet (Pes cavus) [19,20,23] Shortened Achilles tendon [7,21] 	1. Sue Mizaj (Deranged Temperament): [11,12] Sazaj / Sada (Simple): [29,30] <ul style="list-style-type: none"> Hot (Har) Cold (Barid) Wet (Ratab) Dry (Yaabis) Maddi (with morbid matter): [29,30] <ul style="list-style-type: none"> Damwi (Sanguine) Safrawi (Bilious) Balghami (Phlegmatic) Saudawi (Melancholic)
	2. Biomechanical: [7] <ul style="list-style-type: none"> Overpronation Limited ankle dorsiflexion Weak intrinsic foot muscles Weak plantar flexor muscles 	—
Extrinsic Risk Factors	Environmental: [7,24] <ul style="list-style-type: none"> Poor biomechanics/alignment Walking on hard surfaces Barefoot walking Long-standing occupations Poor footwear 	2. Asbabe Munfailla (Predisposing Factors): [11,31] <ul style="list-style-type: none"> Unusual diet Alcoholism Excessive intercourse Inactivity Overuse of joints Mental stress Improper treatment of intestinal issues Heredity Seasonal variation (<i>Khareef & Rabee</i>)
Local / Mechanical Causes [4]	<ul style="list-style-type: none"> Heel spur [5] Tight Achilles tendon Long-distance running Sudden change in activity/footwear Prolonged standing 	3. Ehtebase Madda (Retention of Morbid Matter): [29,30] <ul style="list-style-type: none"> Accumulation of raw humors (<i>Dam, Safra, Balgham, Sauda</i>) in joints Accumulated <i>Reeh</i> (gas) causing joint pain (<i>Wajaul Mafasil</i>)
Possible Causes [4]	<ul style="list-style-type: none"> Plantar fasciitis Nerve impingement Calcaneal stress fracture [26] Fat pad atrophy Neuropathy Ischemia Infection Tumors 	—
Other Medical Disorders [4]	<ul style="list-style-type: none"> Rheumatoid arthritis Spondyloarthropathy Diabetes Mellitus Hypothyroidism Osteoarthritis 	Included under <i>Sue Mizaj Maddi</i> as systemic imbalances affecting joints through humor derangement

Pathophysiology (Mahiyate amraz):

From the **Unani perspective**, joints are prone to disease due to their wide anatomical spaces^{32,33} and cold, dry temperament (*Barid wa Yabis Mizaj*), which limit waste removal.[33] Weak innate heat (*Zaeef Hararat*) and poor digestive and expulsive powers (*Quwate Hazema wa Dafea*) lead to the accumulation of morbid matter (*mawade fuzooni*). Joint movement generates heat that draws this waste into joint spaces, but inefficient local digestion prevents its elimination, causing inflammation, pain, and degeneration. [34]

In contrast, modern medicine attributes conditions like plantar fasciitis to mechanical overload. Repetitive stress causes micro-tears in the plantar fascia, triggering inflammation and collagen breakdown, especially in the central band. This leads to chronic heel pain and dysfunction.[35]

While Unani highlights internal imbalances and poor waste excretion, modern medicine emphasizes mechanical strain. Both systems recognize the role of repeated stress and impaired bodily response, suggesting that an integrated approach could enhance treatment and prevention.

Diagnosis (Tashkhees):

In USM, *Waja-ul-Mafasil* (arthralgia) is symptomatic and temperament-based. Pain that comes on gradually without swelling points to *Sue Mizaj Sada* (simple imbalance), [36,37,38] whereas acute pain with swelling, weight, and change in color points to *Maddi* (humoral factor). Pain that is mild and moving and is accompanied by bloating indicates a *Riyahi* (gaseous) aetiology. Pulse, urine, and other traditional signs help to confirm diagnosis.

Plantar fasciitis in contemporary medicine is diagnosed by patient history and clinical examination^{20,34} and is characterized by tenderness at the medial calcaneal tuberosity. [21,36,41] Pain is usually a sharp or throbbing one, aggravated by the initial steps upon rising in the morning or after rest, and might get better with activity but aggravated by prolonged activity. Barefoot walking or toe bounding increases pain. [3,34,44,45,47] The Windlass test, which maximally stretches the plantar fascia by elevating the big toe, assists in the confirmation of the diagnosis if it elicits pain. It occurs in active and inactive people, particularly those who are obese or on their feet for long periods.

Treatment & Management: (ilaj or intezam)

Category	Unani Treatment (Waja-ul-Mafasil)	Modern Treatment (Plantar Fasciitis) [4,20,36,46,47]
1. Symptom Relief	Use of analgesics, sedatives, anti-inflammatory drugs (oral and local).	NSAIDs, ice/heat therapy, pain management.
2. Root Cause Management	- <i>Ta'deel-e-Mizaj</i> (correction of temperament) - <i>Tanqiya-e-Madda</i> (evacuation of morbid matter) [49]	Address biomechanical causes via orthotics, posture correction, and stretching.
3. Detoxification Methods	- <i>Fasd</i> (venesection) - <i>Hijamah</i> (cupping) - <i>Irsal-e-Alaq</i> (leech therapy) - Purgatives, emetics, etc [41,42].	Not applicable.
4. Strengthening Natural Power	Support <i>Quwat-e-Mudabbira-e-Badan</i> (natural healing force)	Strengthening exercises for foot and calf muscles [48].
5. Local Therapies	- <i>Tabreed</i> (cold sponging) - <i>Nutool</i> (herbal decoction pouring) - <i>Aabzan</i> (foot bath) - <i>Dalak</i> (massage) [42].	Massage therapy, foot soaks, topical pain relievers.
6. Exercise	<i>Riyazat</i> (moderate exercises) [42].	Stretching, strengthening, night splints.
7. Advanced Interventions	Cupping, venesection, leech therapy (as needed). [41-45].	Corticosteroid injections, extracorporeal shock wave therapy, or surgery in chronic cases [48,49].
8. Lifestyle & Dietary Guidance	Advised as per individual <i>Mizaj</i> (temperament) and disease nature.	Patient education on weight management, footwear, and activity modification.

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