Revista ARACÊ
ISSN: 2358-2472

A SYSTEMATIC REVIEW ON THE DIAGNOSIS AND TREATMENT OF PLANTAR FASCIITIS

https://doi.org/10.56238/arev7n4-272

Submitted on: 03/25/2025 **Publication date:** 04/25/2025

Hugo Napoleão Caju Santos Souza Gomes[1], Andressa Rharenna Araújo[2], Bárbara Moreira da Silva[3], Carolina Tomicki[4], Clarissa Castro Martins de Farias[5], Eduardo Costa Cunha[6], Emanuel Carmo de Sá[7], Emilly Gabrielly Martins Lemos[8], Maria Gabriella Ribeiro Farias[9], Michelle Geovanna Campos Oliveira[10], Pedro Henrique Ciochetta[11], Raissa Letycia Silva Pinheiro[12] , Tábata Cléia Alves de Freitas[13], Tífane Cléia Alves de Freitas[14], Vinicius Rodrigues Santos[15].

[1] Student of the 12th period of the medical course at Instituto Tocantinense Presidente Antônio Carlos Porto S.A.- ITPAC Porto Nacional.
Email: Hugonapoleaogomes98@gmail.com
[2] Student of the 7th period of the medical course at Instituto Tocantinense Presidente Antônio Carlos Porto S.A.- ITPAC Porto Nacional.
Email: rharenna15@gmail.com
[3] Student of the 9th period of the medical course at Instituto Tocantinense Presidente Antônio Carlos Porto S.A.- ITPAC Porto Nacional.
E-mail: barbaramoreira0308@gmail.com
[4] Student of the 8th period of the medical course at the University of Pato Branco/UNIDEP.
Email: carol_tomicki@hotmail.com
[5] Student of the 6th period of the medical course at Instituto Tocantinense Presidente Antônio Carlos Porto S.A.- ITPAC Porto Nacional.
E-mail: clarissamartinsdf@gmail.com
[6] Student of the 8th period of the medical course at the Faculty of Medicine of Itajubá - FMIT.
E-mail: educccunha@hotmail.com
[7] Student of the 12th period of the medical course at Instituto Tocantinense Presidente Antônio Carlos Porto S.A.- ITPAC Porto Nacional.
E-mail: emanuelsadecarmo188@gmail.com
[8] Student of the 2nd period of the medical course at Instituto Tocantinense Presidente Antônio Carlos Porto S.A.- ITPAC Porto Nacional.
E-mail: emillymlemos12@gmail.com
[9] Medical. Graduated from Centro Universitário Tocantinense Presidente Antônio Carlos, UNITPAC – Araguaína, TO. Graduated in Internal Medicine from SES- DF HRT.
Email: dramariagabriellafarias@gmail.com
[10] Student of the 11th period of the medical course at the Instituto Tocantinense Presidente Antônio Carlos Porto S.A.- ITPAC Porto Nacional.
Email: michellegeovannacampos@gmail.com
[11] Student of the 9th period of the medical course at the University of Pato Branco/UNIDEP.
Email: pedrociochetta2@gmail.com
[12] Student of the 2nd period of the medical course at Instituto Tocantinense Presidente Antônio Carlos Porto S.A.- ITPAC Porto Nacional.
E-mail: raissaletycia@gmail.com
[13] Medical. Graduated from the Faculty of Higher Education of the Amazon Reunida - FESAR.
E-mail: Tabatacleia@gmail.com
[14] Medical. Graduated from Instituto Tocantinense Presidente Antônio Carlos Porto S.A.- ITPAC Porto Nacional.
E-mail: tifanecleya@gmail.com
[15] Student of the 8th period of the medical course at the Faculty of Health Santo Agostinho de Vitória da Conquista - FASAVIC.
E-mail: vinifasamed@gmail.com

Revista ARACÊ
ISSN: 2358-2472

ABSTRACT

Introduction: This systematic review addresses the epidemiology, diagnosis, and treatment of plantar fasciitis, highlighting the relevance of the topic in the scientific literature and the current state of knowledge about the pathology. Objectives: The study aims to synthesize the available information, comparing different diagnostic and therapeutic approaches. **Methodology:** The methodology includes the analysis of scientific publications, with strict criteria for the selection of relevant studies, covering specific variables and appropriate statistical methods. **Results:** The results present a detailed exposition of the collected observations, organized in a logical way and based on quantitative data. **Discussion:** In the discussion, the findings of the review are compared with previous research, assessing the compatibility of the information and clinical implications. **Final considerations:** Finally, the conclusions highlight the main contributions of the study, reinforcing the importance of accurate diagnostic methods and effective therapies for plantar fasciitis, as well as pointing out possible directions for future research.

Keywords: Clinical Diagnosis. Plantar Fasciitis. Physiotherapy. Orthopedics.

Revista ARACÊ
ISSN: 2358-2472

INTRODUCTION

Plantar fasciitis (PF) is one of the main causes of heel pain in adults, and is often associated with mechanical overload and predisposing anatomical factors (Sant'anna Aragão *et al*., 2024). It is a degenerative condition that significantly compromises the quality of life of patients, and can limit their daily and professional activities (Pereira *et al.,* 2024). Studies indicate that PF affects about 10% of the population throughout life, being especially prevalent in individuals between 40 and 60 years of age (Sant'anna Aragão *et al*., 2024).

The clinical characterization of PF is based on plantar pain, especially when starting walking in the morning, after long periods of rest, and during prolonged ambulation (Pereira *et al*., 2024). The diagnosis is usually clinical, based on the patient's history and physical examination, but complementary tests, such as ultrasound and magnetic resonance imaging, can be used to assess severity and exclude differential diagnoses (Recalcatti, 2021). According to Sant'Anna Aragão et al. (2024), there is a lack of well-established clinical guidelines for the management of PF, which contributes to uncertainties regarding the best therapeutic approach. In addition, studies show that the condition is self-limiting in most cases, with spontaneous resolution within 12 months, but it can become chronic without adequate treatment (Pereira *et al*., 2024).

The treatment of PF involves different approaches, ranging from conservative therapies, such as physical therapy and the use of insoles, to more invasive interventions, such as corticosteroid infiltration and extracorporeal shock waves (Sant'anna Aragão *et al.,* 2024). Physical therapy plays a key role in the rehabilitation of these patients, using techniques such as stretching, muscle strengthening, and electrotherapy, which demonstrate benefits in reducing pain and improving function (Recalcatti, 2021).

This study aims to perform a systematic review on the diagnosis and treatment of PF, in order to identify the best clinical strategies based on recent evidence. As secondary objectives, we seek to clarify whether the diagnosis should be made exclusively through clinical evaluation or if there is a need for complementary tests, identifying which tests are indicated and which findings are relevant. In addition, the treatment currently available will be analyzed, considering conservative, physiotherapeutic and interventional approaches.

The problematization that guides this review is: what are the best diagnostic and therapeutic strategies for plantar fasciitis, based on the evidence available in the scientific literature?

Revista ARACÊ
ISSN: 2358-2472

The justification of this study is based on three main aspects. In academic terms, this review will contribute to an in-depth understanding of the pathophysiology, diagnosis, and treatment of PF, allowing a solid scientific foundation for students and health professionals. From a personal point of view, the interest in the theme arises from the need to consolidate essential knowledge for clinical practice, favoring a more complete and effective training. Finally, the social relevance of this study lies in the search for better interventions for patients affected by this condition, improving quality of life and promoting a more assertive and evidence-based treatment.

Therefore, throughout this systematic review, the main diagnostic and therapeutic strategies for PF will be explored, highlighting advances in the area and proposing reflections on the most effective approaches for this pathology.

METHODOLOGY

TYPE OF STUDY

This study is a systematic review of the literature, following the guidelines of the PRISMA methodology (*Preferred Reporting Items for Systematic Reviews and Meta-Analyses*), with the aim of gathering and critically analyzing scientific evidence on the diagnosis and treatment of plantar fasciitis.

METHODOLOGICAL PROCEDURES

The search for articles was carried out in recognized scientific databases, such as *PubMed, Scielo*, *Latindex* and *Google* Scholar. Descriptors indexed in the Health Sciences Descriptors (DeCS) were used: "plantar fasciitis", "clinical diagnosis", "physiotherapy", and "orthopedics".

INCLUSION AND EXCLUSION CRITERIA

Studies published between 2021 and 2025, available in English and Portuguese, that addressed the diagnosis and treatment of PF in humans, with clear methodology, including other systematic reviews, clinical cases, books, and monographs, were included. Incomplete texts, without references and/or that deviated from the theme were excluded.

Revista ARACÊ
ISSN: 2358-2472

POPULATION AND SAMPLE

The target population of this review includes individuals diagnosed with plantar fasciitis, regardless of age, gender, or level of physical activity. The review sample was composed of articles selected from the systematic screening carried out in the databases, according to the established inclusion criteria.

DATA EXTRACTION AND ANALYSIS

The selected articles were reviewed by two independent researchers, who extracted the relevant information, including sample characteristics, methodology used, main results, and conclusions of the studies. In case of disagreement in the inclusion of any study, a third researcher was consulted for a final decision. The collected data were organized, a table was drawn up and the findings were compared.

VARIABLES ANALYZED

The variables included in the review were: Diagnosis: Clinical criteria and complementary tests used to identify PF; Treatment: Conservative (physiotherapy, use of insoles, therapeutic exercises) and invasive (infiltrations, shockwave therapies, surgeries) approaches; Therapeutic effectiveness: Evaluation of pain reduction, improved functionality, and recovery time of patients.

Data analysis was performed descriptively, comparing the different diagnostic and treatment methods identified in the selected studies, aiming to synthesize the best available evidence on the topic addressed.

RESULTS AND DISCUSSION

Analysis of the reviewed studies revealed that plantar fasciitis (PF) is a common orthopedic condition, primarily affecting adults between the ages of 40 and 60. PF is associated with factors such as mechanical overload, obesity, biomechanical alterations, and overuse of the plantar fascia. Symptoms include severe heel pain, particularly when taking the first steps in the morning or after prolonged periods of rest (Pereira *et al.,* 2024). In addition, studies show that PF is a degenerative syndrome resulting from repetitive microtraumatisms in the medial tuberosity of the calcaneus, leading to an inflammatory process that can progress to fibrosis and calcifications, intensifying pain (Souza *et al.,* 2023).

Revista ARACÊ
ISSN: 2358-2472

The diagnosis of PF is mainly based on the clinical history and physical examination, and complementary tests such as ultrasound and magnetic resonance imaging can be used to confirm the diagnosis in persistent or atypical cases (Aragão *et al.,* 2024). The literature highlights the importance of radiographic examination, which can help differentiate between normal and pathological changes in the calcaneus. Although the presence of calcaneal spurs is not always correlated with pain, imaging is useful to evaluate structural abnormalities and rule out other conditions associated with heel pain (Souza *et al.,* 2023).

Regarding treatment, conservative approaches are the most frequently recommended, including stretching, physical therapy, use of orthopedic insoles, and ice therapy (Recalcatti, 2021). The use of anti-inflammatory drugs and analgesics is also common. In refractory cases, interventions such as infiltration with corticosteroids and shockwave therapy are indicated, and surgery is reserved for extreme cases (Aragão *et al*., 2024). Studies also point out that myofascial release can be a beneficial strategy in relieving pain and improving mobility, and is often used as a complement to other conservative approaches (Rocha *et al.,* 2023).

The data collected demonstrate that most patients present significant improvement with conservative treatment, and the combination of different physical therapy techniques provides more effective results. Evidence also suggests that patient education about the disease and modification of risk factors play a crucial role in preventing recurrences (Recalcatti, 2021).

The results obtained in the review are in line with previous studies, reinforcing that PF is a multifactorial condition with a significant impact on the quality of life of patients. The compatibility of the findings with previous studies suggests that clinical diagnosis remains the primary approach, while complementary tests are recommended only in persistent cases (Pereira *et al*., 2024). The literature also highlights the importance of radiographic and ultrasonographic examinations for the evaluation of PF, helping to differentiate from other pathologies that may coexist with the disease (Souza *et al*., 2023).

Regarding treatment, the findings confirm that conservative interventions are effective in most cases, reducing the need for invasive procedures. Physiotherapy stands out as an essential intervention, with techniques such as stretching, muscle strengthening, and the use of complementary therapies, such as cryotherapy and ultrasound, showing positive results (Recalcatti, 2021). The combination of these approaches proved to be

Revista ARACÊ
ISSN: 2358-2472

superior to isolated treatments, which is in accordance with the literature (Aragão *et al.,* 2024). Myofascial release has also been shown to be a viable option in reducing pain and improving mobility, reinforcing its role as part of a multimodal treatment (Rocha *et al.,* 2023).

The disagreements in the literature concern the long-term efficacy of interventions such as corticosteroid infiltration, shock waves, and platelet-rich plasma therapy. Some studies indicate that these approaches provide temporary relief, while others suggest that they can speed recovery in chronic cases (Aragão *et al.,* 2024).

Thus, the review reaffirms the importance of individualized treatment, taking into account the specific risk factors of each patient. The integration of different therapeutic modalities and patient education on PF management are essential elements for a favorable prognosis.

FINAL CONSIDERATIONS

The literature review reinforces that plantar fasciitis is a multifactorial condition with a significant impact on the quality of life of patients. Clinical diagnosis remains the main approach to identifying the disease, while imaging tests, such as radiography and ultrasound, are indicated for persistent cases or to rule out other associated pathologies. The presence of calcaneal spurs, although common, is not a direct indicator of pain, reinforcing the importance of a careful clinical evaluation.

With regard to treatment, conservative interventions remain the primary and most effective approach in most cases. Techniques such as physical therapy, stretching, muscle strengthening, and myofascial release have demonstrated benefits in relieving pain and improving mobility. The use of orthopedic insoles, ice therapy, and the proper management of biomechanical factors have also been shown to be effective. In more severe or refractory cases, therapies such as corticosteroid infiltrations, shock waves, and even surgery may be necessary, although the long-term effects of these approaches are still debated in the literature.

In addition to therapeutic approaches, the essential role of patient education about the disease and the importance of modifying risk factors, such as obesity and mechanical overload, are highlighted. Adherence to treatment and the adoption of preventive habits are essential to minimize recurrences and improve the quality of life of affected individuals.

Revista ARACÊ
ISSN: 2358-2472

Thus, plantar fasciitis must be treated individually, taking into account the specific needs of each patient. The integration of different therapeutic modalities, associated with adequate follow-up and preventive interventions, can provide better prognoses and reduce the incidence of chronic cases.

Revista ARACÊ
ISSN: 2358-2472

REFERENCES

1. Aragão, F. M. S., et al. (2024). Treatment of plantar fasciitis. *Brazilian Journal of Implantology and Health Sciences*, 6(10), 1417–1439. https://bjihs.emnuvens.com.br/bjihs/article/view/3905

2. da Rocha, P. B., da Rocha, L. B., & Guimarães, J. F. (2023). Benefits of myofascial release in plantar fasciitis: A literature review. *Ibero-American Journal of Humanities, Sciences and Education*, 9(10), 3284–3293. https://periodicorease.pro.br/rease/article/view/12058

3. de Souza, S. L., et al. (2023). The importance of radiographic examination in the diagnosis of patients with plantar fasciitis. *Academic Journal Health and Education*, 2(1), 1–10. https://revistaacademicafalog.com.br/index.php/falog/article/view/89

4. Pereira, K. M., et al. (2024). Analysis of the characteristics and therapeutic approach of plantar fasciitis. *Ibero-American Journal of Humanities, Sciences and Education*, 10(9), 881–891. https://periodicorease.pro.br/rease/article/view/15456

5. Recalcatti, L. A. (n.d.). *Physiotherapeutic performance in the treatment of plantar fasciitis* [Unpublished manuscript]. Unifacvest University Center. https://www.unifacvest.edu.br/assets/uploads/files/arquivos/4718e-recalcatti-lucas,-atuacao-fisioterapeutica-no-tratamento-de-fascite-plantar-(3).pdf