

Case Report on the Use of Centaury Oil as Phytotherapy in Diabetic Foot Care

Ayşe TÜFEKÇİOĞLU^{1*}, Gönül DÜZGÜN², Fisun ŞENUZUN AYKAR³

¹Graduet Student, İzmir Tınaztepe University, Department of Internal Medicine Nursing, İzmir, Türkiye.

²Assistant Prof. İzmir Tınaztepe University, Health Servicesvocational School Department of First aid and Emergency İzmir, Türkiye.

³Professor Doctor, İzmir Tınaztepe Universty, Internal Medicine Nursing Department, İzmir, Türkiye.

***Corresponding Author:** Ayşe TÜFEKÇİOĞLU, Graduet Student, İzmir Tınaztepe University, Department of Internal Medicine Nursing, İzmir, Türkiye.

ABSTRACT

Diabetes is a metabolic disorder characterized by partial or complete insulin deficiency due to endocrine dysfunction of the pancreas or systemic hyperglycemia secondary to insulin resistance in peripheral tissues. In addition to common symptoms such as polyuria, polydipsia, fatigue, dry mouth, weight loss, blurred vision, itching, persistent and recurrent fungal infections. Diabetes can also manifest itself with less common symptoms such as infections. Since diabetes is a chronic disease, it brings with it various complications. These complications are divided into two basic groups: microvascular and macrovascular. One of the most common microvascular complications is neuropathy. Diabetic foot, which develops as a result of infection and ischemia along with neuropathy, accounts for a significant portion of lower extremity amputations. In the pathophysiology of neuropathy, impaired microcirculation, sorbitol and glycosylated metabolic residues cause myelinated and non-myelinated nerve loss . Motor neuropathy, along with foot deformity, creates a tendency to change the pressure distribution on the sole of the foot and to ulceration. Related to diabetic foot. It is possible to evaluate the problems as Charcot neuroarthropathy, foot ulcers and acute widespread infections. In diabetic foot ulcers, the patient's quality of life is significantly affected, the patient may also experience difficulties in social life and ulcers may result in amputation. Approximately 40-60% of non-traumatic lower extremity amputations are affected. causes diabetic foot ulcers. Hypericum Perforatum L., popularly known as St. John's wort, is a plant frequently used in our country and all over the world due to its contributions to wound healing. Its effectiveness on almost all stages of wound healing, its anti-inflammatory, antibacterial and antiviral, immunity-enhancing and wound healing-accelerating effects are also confirmed by studies supported. The major components that contribute to wound healing are hyperforin, a phloroglucinol derivative, and hypericin, a naphthodianthrone. Additionally, hypericin is the component that gives St. John's wort oil its dark color. The effect of St. John's wort was examined in our patient who developed a diabetic ulcer.

Keywords: Diabetic Foot, Centaury Oil, Phytotherapy

ARTICLE INFORMATION

Received: 27 July 2025

Accepted: 25 August 2025

Published: 01 September 2025

Cite this article as:

Ayşe TÜFEKÇİOĞLU, Gönül DÜZGÜN, Fisun ŞENUZUN AYKAR. Case Report on the Use of Centaury Oil as Phytotherapy in Diabetic Foot Care. Journal of Research in Nursing and Health Care, 2025; 2(2); 06-09.

<https://doi.org/10.71123/jrnhc.v2.i2.25002>

Copyright: © 2025. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.



INTRODUCTION

Diabetes is a metabolic disorder characterised by systemic hyperglycaemia secondary to partial or complete insulin deficiency due to endocrine dysfunction of the pancreas or resistance of insulin in peripheral tissues. In addition to common symptoms such as polyuria, polydipsia, fatigue, dry mouth, diabetes can manifest itself with less common symptoms such as weight loss, blurred vision, itching, persistent and recurrent fungal infections. Four different tests can be used in the diagnostic phase and all of them are equivalent in terms of effectiveness. Fasting plasma glucose level equal to and above 126 mg/dl, second hour plasma glucose level equal to and above 200 mg/dl with oral glucose tolerance test, plasma glucose level equal to and above 200 mg/dl measured at a random time with symptoms of diabetes, hba1c level equal to and above 6.5% are diagnostic thresholds.

These complications are divided into two basic groups as microvascular and macrovascular. One of the most common microvascular complications is neuropathy. Diabetic foot, which develops as a result of infection and ischaemia with neuropathy, constitutes an important part of lower extremity amputations (1). In the pathophysiology of neuropathy, impaired microcirculation, sorbitol and glycosylated metabolic residues cause loss of myelinated and unmyelinated nerves (2). Motor neuropathy causes foot deformity, changes in the pressure distribution on the sole of the foot and predisposition to ulceration (3). It is possible to evaluate the problems related to diabetic foot as Charcot neuroarthropathy, foot ulcers and acute widespread infections (4). In diabetic foot ulcers, the patient's quality of life is significantly affected, the patient may have difficulty in social life and ulcers may result in amputation (5). 40-60% of non-traumatic lower extremity amputations are diabetic foot ulcers. The length of hospital stay, treatment costs and re-amputation rates of these patients are quite high and bring additional burden in terms of treatment expenditures (6) Vasculopathy and polyneuropathy are two important predisposing factors in

the development of foot ulcers in diabetics. It is possible to classify foot ulcers as neuropathic, ischaemic, neuro-ischemic (7)

In the prevention of diabetic foot ulcers, risk assessment, education of patients and their relatives, regular outpatient clinic follow-up and elimination of predisposing factors constitute the basic care principles. After ulcer development, appropriate antibiotherapy, wound debridement and optimal glycaemic control are the main approaches (1)

Phytotherapy is the name given to the use of various plant extracts for medicinal purposes by transforming them as a result of chemical processes. Especially towards the end of the last century, the fact that it has a low side effect profile, high efficacy in terms of efficacy, easy accessibility and easy applicability has caused medicinal plants to be used more effectively, especially in topical treatment, and to be more involved in scientific research (8)

Hypericum Perforatum L., commonly known as St John's wort, is a plant that is frequently used in our country and all over the world due to its contributions to wound healing. Its effectiveness in almost all stages of wound healing, anti-inflammatory, antibacterial and antiviral, immunity-enhancing and wound healing accelerating effects have been supported by studies (8, 9, 10)

Some of the chemical components responsible for these effects are tannins, essential oils and amino acids, fluoroglucinols, flavonoids, naphthodiantrone derivatives. The major components that contribute to wound healing are hyperforin, which is a fluoroglucinol derivative, and hypericin from naphthodiantrone derivatives. In addition, hypericin is the component that gives St. John's wort oil its dark colour. (11,12)

The effect of yellow cantarone was analysed in our patient who developed diabetic ulcer.

CASE

Our case is a 65-year-old male patient with type 2 diabetes mellitus for 35 years. He has been using bolus and long-



Picture 1. Start of treatment



Picture 1. 1 week later

acting insulin as antidiabetic treatment. The patient had 2*1 cm ulcerated lesions on the dorsal surface of the second and third phalanges of the right foot. It was at grade 2 level according to the WAGNER scale. The patient had received hyperbaric oxygen therapy about 4 weeks before

the application of St John's wort oil. The patient applied St John's wort oil twice a day for seven days in the form of atushman. After seven days of treatment, the lesions regressed from grade 2 to grade 1.

Table 1. *Wagner Classification in Diabetic Foot Ulcer.*

Phase 0	1.0 Bone prominence and/or callus formation with intact skin
Phase 1	1.1 Superficial ulcer without spread to deep tissues
Phase 2	1.2 Deep ulcer involving tendons, bones and ligaments
Phase 3	1.3 Deep ulcer with abscess and/or osteomyelitis
Phase 4	1.4 Gangrene involving the fingers and/or metatarsals
Phase 5	1.5 Gangrene of the heel or foot that cannot be saved and requires amputation

DISCUSSION

When we look at the literature, in Darcan study, the effects of 1% St John's wort ointment were evaluated microscopically, macroscopically and biochemically on the 7th and 14th days in the injury caused in mice with streptozocin-induced experimental diabetes. At the end of the 14th day, it was concluded that macroscopic healing was 69.16% in the group to which 1% ointment was applied (11).

In another study in which the effect of H.perforatum on acute burns was examined in the literature, Cabbaroğlu created an experimental burn model in mice, divided them into 5 different groups and examined their effects. In the 1st group no treatment was applied, in the 2nd group only irrigation with saline was provided after the burn, in the 3rd group silver sulfadiazine was applied every 6 hours, in the 4th group H.perforatum was applied every 6 hours, in the 5th group placebo gel was applied. According to the results of the study, H.perforatum reduced the amount of oedema, the amount of damage to the hair follicle and sebaceous glands, and vascular damage compared to silver sulphadiazine (13).

CONCLUSION AND RECOMMENDATION

In our case, the presence of a single session of hyperbaric oxygen therapy before St. John's wort application requires additional studies to evaluate whether the results are only the effect of St. John's wort application. More scientific studies are needed to include phytotherapeutic methods in the wound care process after the development of diabetic ulcers and to better evaluate the effectiveness.

REFERENCES

1. TEMD DIABETES MELLITUS AND ITS COMPLICATIONS DIAGNOSIS, TREATMENT AND MONITORING GUIDE 2022
2. Guyton GP, Saltzman CL (2002). The diabetic foot: basic mechanisms of disease. Instr Course Lect;51: 169-181
3. Vinik AI, Erbas T, Pfeifer MA; Feldman EL, Stevens MJ, Russell JW (2002). Diabetic autonomic neuropathy. In: Porte D, Sherwin RS, Baron A eds. Ellenberg and Rifkin's Diabetes Mellitus. 6th ed. New York: McGraw Hill; 789-804
4. American Diabetes Association Professional Practice Committee; Draznin B, Aroda VR, Bakris G, Benson G, et al. (2022) Retinopathy, Neuropathy, and Foot Care: Standards of Medical Care in Diabetes-. Diabetes Care;45:S185–S194, <https://doi.org/10.2337/dc22-S012>
5. Valensi P, Girod I, Baron F, Moreau-Defarges T, Guillon P. (2005 Jun; 31) Quality of life and clinical correlates in patients with diabetic foot ulcers. Diabetes Metab. (3 Pt 1);263- 71
6. Economic costs of diabetes in the U.S. In 2007. (2008 Mar). American Diabetes Association Diabetes Care; 31(3):59
7. McNeely MJ, Boyko E, Ahroni JH. (1995) The independent contributions of diabetic neuropathy and vasculopathy in foot ulceration: how great are the risks? Diabetes Care 18:216–9
8. Peşin İ. (2007) Studies on the wound healing and anti-inflammatory activities of Hypericum Perforatum L. and Hypericum Scabrum L. plants (Specialization Thesis). Institute of Health Sciences, Master's Thesis, Ankara, Gazi University,
9. Öztürk N, Korkmaz S, Öztürk Y. (2007) Wound-healing activity of St. John's wort (Hypericum perforatum L.) on chicken embryonic fibroblasts. Journal of Ethnopharmacol.; 111:33-39
10. Süntar IP, Akkol EK, Yılmaz D, Baykal T, Kirmizibekmez H, Alper M, et al. (2010) Investigations on the in vivo wound healing potential of Hypericum perforatum L. Journal of Ethnopharmacology.;127:468-477
11. Darcan S. (2013) Examination of the effects of Hypericum perforatum ointment on the skin wounds of rats made

- diabetic with streptozotocin. Kütahya, Dumlupınar University,
12. Şengüler K. (2009) *Hypericum perforatum* L from different locations of the Aegean region. Morphological and anatomical studies (Master's Thesis). Izmir, Ege University,
13. Cabbaroğlu D. (2013) Comparison of the effects of emergency treatment methods on wound healing in experimental contact type burns with *hypericum perforatum* (St. John's wort) treatment (Specialization Thesis). Izmir, Ege University,