Global Journal of
Pharmacy & Pharmaceutical Sciences
ISSN: 2573-2250

Juniper Publishers
key to the Researchers

Case Report
Volume 11 Issue 5 April 2025
DOI: 10.19080/GJPPS.2025.11.555823

Glob J Pharmaceu Sci


# Topical Black seed oil Synergy in Management of Herpes-Zoster -a Case Report

**Asma Umer Khayam[1], Shawana Sharif[2] and Mohammad Akram Randhawa[3]***

*[1]Department of Research, Health Services Academy, Islamabad; 2Dermatology and 3Pharmacology, Rawalpindi Medical University, Rawalpindi, Pakistan*

**Submission:** March 20, 2025; **Published:** April 2, 2025

***Corresponding author:** Mohammad Akram Randhawa, Professor Emeritus, Department of Pharmacology, Rawlpindi Medical University, Rawalpindi, Pakistan

**Abstract**

Present case report is aimed to demonstrate beneficial effect of topical application of Black Seed (Nigella sativa) oil in the management of a case of herpes-zoster, along with oral administration of Famciclovir for one week. A 69-year-old male reported to Dermatology Unit of Rawalpindi Medical University, with typical dermatomal presentation of recurrent herpes around right shoulder (Dermatome T-2). The patient had maculopapular rash in front of right side of chest, right arm-pit and medial part of right upper-am, and moderate to severe burning pain for 3-4 days. He was using Betnovate cream (Betamethasone 1%) for 2-3 days, prescribed by a General Practitioner with poor response. Patient was advised to take oral Famciclovir (250mg tablets three times daily) and apply black seed oil in affected area morning and evening. Lesions completely subsided and burning pain disappeared within 4-5 days. While usual oral doses of famciclovir recommended for mild to moderate recurrent herpes zoster are 500mg orally three times daily for 10 days. Topical Black seed oil Synergy permitted half the usual dose and faster recovery.. Benefits of black seed oil in controlling pain and healing of lesions are linked to its analgesic, anti-inflammatory and antimicrobial effects documented in the literature.

**Keywords:** Herpes-Zoster; Right Shoulder; Elderly Male; Acyclovir Tablets; Black Seed Oil

## Introduction

Herpes zoster (Shingles) develops due to reactivation of the varicella-zoster virus that has been dormant in dorsal root ganglia for many years, after the patient's first exposure, and usually presents as a painful dermatomal rash. Symptoms start with pain along the affected dermatome, which is then followed by a group of painful vesicular lesions on erythematous base in few days. Although the rash is usually self-limiting, but may lead to more serious consequences including post-herpetic neuralgia (PHN), which can develop in 10-18% and last for months or even years. The risk of PHN increases with age and elderly persons are more likely to get severe and longer lasting pain. Superinfection of lesions, mostly by Staph aureus, or occasionally due to group A beta Hemolytic Streptococcus can occur [1]. Therefore, particularly, older patients should be adequately taken care of and treated promptly. Treatment includes the administration of systemic antiviral drug, a topical analgesic and a topical antimicrobial preparation. In mild to moderate cases oral therapy is accomplished with one of the antiviral drugs (Acyclovir, Valacyclovir, Penciclovir, or Famciclovir,), which are more beneficial when started within 72 hours of appearing of pain and rash. Intravenous route is employed in severe cases. Previously used drugs (e.g., vidarabine, interferon, etc.), which were less effective and relatively more toxic have been replaced by more effective and safer antiviral agents mentioned above [2].

Traditional medical systems have honored black seed, or Nigella sativa (N. sativa) for its reputed health benefits. Black seed, commonly referred to as "Habbat al-Barakah" or "the blessed seed," possesses analgesic, anti-inflammatory and anti-microbial activities [3,4]. Analgesic and anti-inflammatory activities of N. sativa have been reported in many in vivo small animal studies. For example, the aqueous extract of N. sativa seed significantly increased hot plate reaction time in mice showing analgesic effect and was shown to inhibit Carrageenan induced paw edema in albino rats [5]. Similarly, abdominal constrictions produced by acetic acid administered intraperitoneally to mice and carrageenan-induced paw edema in albino rats were prevented by an organic solvent extract of black seed [6]. In a recent study N. sativa essential oil was shown to inhibit the growth of Staph

aureus, E. coli and L. monocytogenes in an in vitro antimicrobial assay [7]. Many earlier studies have also reported similar antimicrobial activities of Black seed. For example, the oil of N. sativa was effective against multi-drug-resistant strains of Staph aureus and Pseudomonas aeruginosa [8] and methicillin-resistant Staph aureus [9]. Therefore, topical application of black seed oil was prescribed with aim to combat pain and inflammation, as well as prevent and treat infection and promote healing of the herpetic lesions.

## Study Objectives

Considering analgesic, anti-inflammatory and anti-microbial activities of black seed, the present case study was aimed to explore the therapeutic benefits of the supplementation of topical black seed oil with oral acyclovir in the treatment of a reactivated varicella-zoster viral infection in an elderly male.

## Case Description

Mr. S, 69 years of age, presented to the dermatology outpatient department of Benazir Bhatto Hospital, a teaching hospital of Rawalpindi Medical University, Rawalpindi, Pakistan with a history of moderate to severe burning pain around the right shoulder followed by maculopapular rash in front of right side of chest, right arm-pit and medial part of right upper-am (Dermatome supplied by 2nd thorasic, T2, nerve) for 3-4 days. He was prescribed topical Betnovate cream (Betamethasone 1%) by a General Practitioner, which he used for 2-3 days but the response was very poor.

Patient was advised to take oral acyclovir (250mg tablets three times daily) and apply black seed oil in the affected area morning and evening. The lesions subsided and burning pain disappeared within 4-5 days. The benefits of black seed oil in healing of lesions and treating burning pain are linked to its antimicrobial and anti-inflammatory effects documented in the literature (Figure 1).


**Figure 1:** Herpes-zoster lesions on medial side of right upper arm (A), right armpit (B) and right front chest (C), before treatment. Lesions almost completely disappeared (D, E & F) within 4-5 days of treatment with oral Famciclovir and topical black seed oil.


How to cite this article: Asma Umer K, Shawana S, Mohammad Akram R. Topical Black seed oil Synergy in Management of Herpes-Zoster -a Case Report. Glob J Pharmaceu Sci. 2024; 11(5): 555823. DOI:10.19080/GJPPS.2024.11.555823

## Discussion

The present case study demonstrates the benefits of the addition of topical black seed oil with oral Famaciclovir in the management of a reactivated varicella-zoster viral infection in an elderly male. Usual doses of famciclovir recommended for mild to moderate recurrent herpes zoster infection are 500 mg orally three times daily for 7-10 days [10]. Whereas, supplementation of topical BS oil permitted the use of half the usual dose of famciclovir (250mg thrice daily and faster recovery. Black seed is well known to possess analgesic, anti-inflammatory and anti-microbial effects. Recently, the mechanism of analgesic and anti-inflammatory activity of black seed oil has been investigated and reported to be linked to phenols and polyphenols, e.g., ferulic acid, p-coumaric acid, kaempferol, and quercetin. Ferulic acid and other phenols were shown to reduce synthesis of phospholipids, important for formation of arachidonic acid, which is a precursor of Prostaglandins and Leukotrienes, the key mediators of pain and inflammation. Additionally, these phenols decreased prostaglandin E2 (PGE2) by upregulating the expression of pKA, HMOX, and nrf2. Most components of N. sativa also reduce the expression of COX1 and COX2, essential enzymes for the synthesis of PGE2. By blocking the extended arachidonic acid route, ferulic acid, quercetin, p-coumaric acid, and kaempferol work together to reduce pain and inflammation. [11]. These findings support the results of a number of earlier studies conducted for the elucidation of the mode of action of N. sativa seed, its oil, various extracts and active components [12].

Famciclovir is a prodrug of penciclovir. Penciclovir is first converted to penciclovir-monophosphate by viral tyrosine kinase, then to penciclovir-triphosphate by host cellular enzymes. Penciclovir triphosphate blocks viral DNA synthesis through competitive inhibition of viral DNA polymerase, thus inhibits viral multiplication. After a single oral dose of 250 mg of famciclovir, bioavailability of penciclovir is 77% and peak plasma concentrations of 1.9 and 3.5 µg/ml are achieved at 1 hour. Penciclovir is not metabolized in the body and is eliminated unchanged in urine. Therefore, famciclovir can be safely used in liver disease but needs adjustment of the dose in renal disorders, with creatinine clearance of <60 ml/min. The recommended dose of famciclovir for uncomplicated herpes zoster is 500 mg three times daily for 7-10 days. The common adverse effects reported are mild headache and nausea, otherwise, it is quite safe [2]. An important causative factor related to reoccurrence of herpes-zoster is age, perhaps due to decrease in virus specific cell-mediated immunity in old age.

Elderly persons are also more likely to suffer from postherpetic neuralgia. Reactivation of herpes is reported to be more common in women, particularly elderly women. Genetic predisposition is also possible as positive family history increases chances of herpes to reoccur. Another important factor is immune deficiency, which may be due to human immunodeficiency virus (HIV) infection, haematological malignancies, patients taking immunosuppressive medications (to treat autoimmune diseases, or cancer, or have undergone organ transplant). Immune deficiency may also be linked to chronic illnesses such as asthma, chronic obstructive pulmonary disease, chronic heart failure, diabetes and chronic infection, e.g. tuberculosis. to be owing to systemic inflammation and disruption of the. Reactivation of herpes-zoster may also be associated with physical stress (e.g. injury at the dermatome involved) or psychological or emotional stress (e.g. financial loss, loss of close relative, etc.) [13]. Although the herpetic rash is mostly self-limiting, but it usually takes around 10 days to make scabs and around a month for complete healing [1,14]. Relatively prompt recovery in our case, within 4-5 days is most probably due to the supplementation of topical black seed oil besides oral famciclovir, which contributed in the relief of pain, control of inflammation, treating/preventing superinfection and wound healing [15].

## References


1. Shingles (Herpes Zoster) CDC, Shingles Home, For Healthcare Professionals. Clinical Overview.
2. Gnann Jr, Ann Arvin, Gabriella CF, Edward Mocarski, Patrick SM, et al. (2007) Antiviral therapy of varicella-zoster virus infections. Human Herpesviruses: Biology, Therapy, and Immunoprophylaxis. Cambridge: Cambridge University Press, USA Chapter 65.
3. Hannan MA, Rahman MA, Sohag AAM, Uddin MJ, Dash R, et al. (2021) Black cumin (Nigella sativa l.): A comprehensive review on phytochemistry, health benefits, molecular pharmacology, and safety 13(6): 1784.
4. Fatima SK, Soubra W, Cordato DJ (2021) The role of thymoquinone, a major constituent of Nigella sativa, in the treatment of inflammatory and infectious diseases. Clinical and Experimental Pharmacology and Physiology 48(11): 1445-1453.
5. Al Ghamdi MS (2001) Anti-infammatory, analgesic and anti-pyretic activity of Nigella sativa. J Etho-Pharmacol 76(1): 45-48.
6. Shaheen N, Azam A, Ganguly A, Anwar S3, Parvez MSA, et al. (2022) Anti-inflammatory and analgesic activities of black cumin (BC, Nigella sativa L.) extracts in in vivo model systems. Bull Natl Res Cent 46: 26.
7. Abo Neima SE, El Sheekh M, Al Zaban MI, EL Sayed AIM (2023) Antibacterial and anti-corona virus (229E) activity of oil combined with photodynamic therapy based on methylene blue in wound infection: in vitro and in vivo study. BMC Microbiology 23(1): 274.
8. Arici M, Sagdic U, Gecgel I (2005) Antibacterial efect of Turkish black cumin (Nigella sativa L.) oil in gram. Grasasy Aceites 56: 259-262.
9. Gawron G, Wojciech K, Krzyszt L, Alicja O, Leszek K, et al. (2019) Nigella sativa seed extract applicability in preparations against methicillin resistant Staphylococcus aureus and efects on human dermal fbroblasts viability. J Ethnopharmacol 244: 112135.
10. https://www.accessdata.fda.gov/drugsatfda_docs/label/2011/020363s037lbl.pdf.
11. Zhai Y, Wang T, Fu Y, Yu T, Ding Y, et al. (2023) A Review of Pharmacology, Toxicology, and Therapeutic Effects on Pulmonary Diseases. Vol. 24, International Journal of Molecular Sciences. Multidisciplinary Digital Publishing Institute 24(9): 8011.



**How to cite this article:** Asma Umer K, Shawana S, Mohammad Akram R. Topical Black seed oil Synergy in Management of Herpes-Zoster -a Case Report. Glob J Pharmaceu Sci. 2024; 11(5): 555823. DOI:10.19080/GJPPS.2024.11.555823

12. Shaheen N, Azam A, Ganguly A, Anwar S, Sorwer Alam M, et al. (2021) Anti-allergic and anti-inflammatory activities of black cumin extracts in in vitro and in vivo model systems.

13. Bond G, Panesar P (2021) Dermatological conditions, Case-based learning: shingles. Pharmaceutial Journal.

14. Cohen KR, Salbu RL, Frank J, Israel I (2013) Presentation and management of herpes zoster (shingles) in the geriatric population. P T 38(4): 217-227.

15. Aljabre SHM, Alakloby OM, Randhawa MA (2015) Dermatological effects of Nigella sativa-Review. J Dermatology & Dermatlologic Surgery 19(2): 92-98.


DOI: 10.19080/GJPPS.2024.11.555823




**How to cite this article:** Asma Umer K, Shawana S, Mohammad Akram R. Topical Black seed oil Synergy in Management of Herpes-Zoster -a Case Report. Glob J Pharmaceu Sci. 2024; 11(5): 555823. DOI:10.19080/GJPPS.2024.11.555823