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A REVIEW OF THE TREATMENT MODALITY FOR ORAL LESIONS OF HERPES ZOSTER

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ABSTRACT

Herpes Zoster (HZ) is a common viral infection caused by varicella-zoster virus. The varicella-zoster virus (VZV), is an alpha herpes virus that causes shingles, herpes zoster, and chickenpox. Herpes Zoster is more common as people age since varicella is a secondary cause of it. Herpes Zoster is uncommon in children and young people. The most frequent risk factors in adults are old age, stress, systemic diseases and AIDS or COVID-19, as well as immunosuppression. The disease exhibits a range of clinical symptoms at various clinical stages and the risk of complications is increased for some presentations.

KEYWORDS: Varicella-zoster virus, Herpes zoster, complications, treatment, prevention.

INTRODUCTION

The virus that causes both chickenpox/varicella and shingles/Herpes zoster (HZ) is known as the varicella-zoster virus (VZV), human herpes virus 3.[1] The three stages of herpes zoster infection are often experienced by patients: prodromal, active, and chronic. The prodromal syndrome stage manifests as skin-over the damaged nerve distribution, burning, tingling, itching, boring, prickly, or knife-like sensations. This typically appears a few hours to many days before the rash of the active stage.[2,3,4] The rash appears during the active stage, which may also include broad malaise, headache, low-grade fever, and occasionally nausea. In 12–24 hours, the rash changes from erythematous papules and oedema to vesicles, and in 1–7 days, it turns into pustules. In 14–21 days, the pustules start to dry out and produce crusts,

Typically, intra-oral lesions develop following the cutaneous rash.[5] When the rash is at its most active during the active stage, pain and dysesthesia are said to be modest.[6]

The trigeminal nerve divisions are commonly afflicted by herpes zoster. approximately, 18-20% people affected by herpes zoster. However the ophthalmic branch is more frequently impacted than the second or third divisions. Along with intraoral lesions of one of the trigeminal nerve branches, vesicular eruptions with erythema were noticed on the nose, upper lip, lower lip, zygoma, malar area, temporal region, and forehead. Clinically, oral herpes zoster can be recognised from other acute numerous mouth lesions that are bilateral, without pain along the course of one trigeminal nerve branch, when the clinical appearance is typical and the vesicles are present.[7]

Complications

There are various complications occur in the patient such as, cutaneous varicella zoster spread, bacterial superinfection, and other acute consequences shingles (gangrenosum, haemorrhagic), Septicemia, Aseptic meningitis, peripheral and cranial nerve palsies, meningoencephalitis Secondary glaucoma, conjunctivitis, episcleritis, uveitis, keratitis, acute renal failure, decreased corneal sensations ocular neuropathy Mydriasis, Ptosis Neural bronchitis, pleuritis, esophagitis, gastroenterocolitis, peritonitis, myocarditis, pneumonitis, hepatitis, and arthritis.

Chronic side effects include the development of scars (atrophic and hypertrophic scars), hypo-or depigmentation, post-herpetic neuralgia (PHN), and Guillain-Barre syndrome. granulomatous cerebral angiitis, diaphragmatic paralysis, Bladder dysfunction, sensory loss/deafness, chorioretinitis, optic nerve atrophy, and progressive outer retinal necrosis are some of the symptoms of autonomic dysfunction.[7]

Treatment Modalities for Oral Lesions

The primary goals for the treatment of herpes zoster involve reduction of pain and cessation of viral replication. The treatment protocol includes:[8,9]

1. Conventional Medicinal Regimen

- Antiviral agents
- Corticosteroids
- Analgesics and non-steroidal anti-inflammatory drugs (NSAIDS)

- Tricyclic antidepressants

2. Natural treatment options

- Dietary/ multiple nutrients
- Enzyme therapy
- Botanicals with special efficacy for herpes zoster

3. Patient Education
4. Latent Therapy

CONVENTIONAL MEDICINAL REGIMEN

A. Antiviral Agents

Antiviral therapy seems to be the preferred way for treating herpes zoster right now, especially for treating elderly and immunocompromised patients. Although numerous clinical studies have shown effectiveness in lowering the length of the rash and the severity of the accompanying discomfort, benefit has only been shown in patients who received treatment within 72 hours of the rash's beginning. The three most commonly used antiviral agents used in treatment of herpes zoster are (Table 1).[10,11]

Medication	Dosage	Duration of Treatment
Acyclovir	800mg five times daily	7-10 days
Famciclovir	500 mg three times daily	7 days
Valacyclovir	1000mg three times daily	7 days

B. Corticosteroids

Although clinical trials have produced mixed outcomes for preventing the development of post herpetic neuralgia, oral corticosteroids are frequently utilised for pain management in herpes zoster patients. Another trial study showed that using prednisone and acyclovir together significantly reduced the discomfort caused by herpes zoster.[11,12]

C. Analgesics and NSAIDs

The pain associated with herpes zoster covers a broad Spectrum of intensity with mild to moderate pain find sufficient relief via topical or oral analgesic and anti-inflammatory agents. Many studies shows that topical aspirin preparations can provide temporary relief in case of acute herpetic neuralgia and post herpetic neuralgia.[13] In one randomized trial comparing the efficacy of a tropical aspirin moisturizer (75mg aspirin/ml of moisturizer three times daily) to oral aspirin (375 -750mg three times daily for 21 days.

D. Tricyclic Antidepressant

Tricyclic antidepressants (TCAs) at low doses have also been applied to PHN. TCAs reduce pain by preventing the reuptake of serotonin and norepinephrine, although favourable effects don't appear for at least three months.[14] Antidepressants such as amitriptyline (Elavil), nortriptyline (Pamelor), imipramine (Tofranil), and desipramine are frequently recommended for herpes zoster (Norprammin).[15]

NATURAL TREATMENT OPTIONS

The goal of natural therapeutics in the prevention and treatment of herpes zoster and post herpetic neuralgia is to speed up the healing of skin lesions, lessen discomfort, and avoid complications, similar to conventional procedures. To increase cell mediated immunity, which will enable the body's natural defence mechanisms to regulate the virus and prevent recurrence, is a fundamental aim of using natural remedies. Therefore, natural remedies can lessen the chance of establishing viral resistance, as well as prevent and treat problems.

- **Dietary/Multiple-Nutrient Effects**

Herpes zoster incidence increases significantly after age 50. The potential loss in immunological proficiency is one explanation (immunosuppression). Keeping a healthy diet is one. important element to a strong cell-mediated immune system.

Both a fat-soluble vitamin and a hormone, vitamin A contributes to the production of the pigment rhodopsin in the eye and regulates gene transcription to permit appropriate proliferation and differentiation of epithelial cells. The creation of lymphocytes, neutrophils, cytokines, and immunoglobulins is one of its important immunological modulatory functions. Additionally, a lack of it has been linked to a higher risk of contracting a number of viral disorders, such as herpes zoster.[15]

- **Enzyme Therapy:** In Germany, pancreatic enzyme formulations were successfully utilised to treat herpes zoster prior to the development of acyclovir. Acyclovir (800 mg) or an enzyme preparation (120 mg trypsin, 40 mg chymotrypsin, and 320 mg papain) were given to two groups of 96 herpes zoster patients five times daily for seven days, and were then observed for 14 days, the study's overall finding was that the enzyme preparation was just as efficient as acyclovir. The enzyme formula's presumed methods of action included promoting immune complex breakdown and increasing cell-mediated immunity.[16]

Botanicals with Specific Efficacy for Herpes Zoster

a. Capsaicin (from Capsicum frutescens)

Capsaicin is an alkaloid derived from cayenne pepper (Capsicum frutescens). Capsaicin causes an increase in the release of substance P. Eventually the substance P is depleted and further releases from the nerve ending are reduced.[17] Creams containing capsaicin have reduced post-operative pain associated with mastectomy patients and for amputees suffering from phantom limb.

b. Licorice (Glycyrrhiza glabra)

Licorice is one of the most widely used herbs in traditional medicine spanning many generations and several continents. It possesses properties of an anti-inflammatory, mucoprotectant and antiviral agents. This suggested that it may have potential value in the treatment of herpes zoster.[18]

c. Madonna Lily (Lilium candidum)

In northern Italy, traditional folk medicine has identified Lilium candidum as an herbal treatment for herpes zoster.[19] Bulbs of cultivated L. candidum haveyielded successful results when fried in olive oil and applied externallyas a poultice on herpes zoster lesions.

d. Reishi Mushroom (Ganoderma lucidum)

A few small studies have documented the effect of Ganoderma lucidum alone or in combination with other herbs for the treatment of herpes zoster or post herpetic neuralgi.[20]

e. Bi Phaya Yaw (Clinacanthus nutans)

Several studies have documented its benefit for herpes zoster. One randomized, placebo controlled trial was performed on 51 herpes zoster patients using a topical preparation of C. nutans extract applied five times daily for 7-14 days. This was followed by resolution of the herpetic lesions.[21]

f. Other Botanical Considerations

The following botanicals or plant extracts when used in vitro or vivo have demonstrated efficacy against HSV type 1 and 2. They have also been highlighted to be possibly considered in the management of herpeszoster.[22,23]

These include

- Honey/Propolis

- Sangre de Grado (Croton lechleri)
- Aloe (Aloe vera)
- St John's wort (Hypericum perforatum and spp)

PATIENT EDUCATION

Herpes zoster therapy should be carried out in cooperation with the proper guidance and assistance from the healthcare professionals. Adherence to therapy depends on a thorough description of the illness, including the possibility of viral transmission to people and the suggested treatment strategy. Patients benefit from being reassured and informed about common misconceptions about herpes zoster and its effects on their health. Encouragement, assurance, and guidance on improving one's quality of life are crucial as well and should promote sufficient nutrition as well as the ideal levels of mental, physical, and social engagement. Patients should be advised:-[23]

- To keep the rash clean and dry so as to reduce the risk of bacterial super infection.
- To avoid use of topical antibiotics and dressings with adhesive that can cause irritation and delay in rash healing

LATENT THERAPY

- **Acupuncture:** Long recognised as a successful treatment for pain management, acupuncture. Its usage in cases of herpes zoster and post-herpetic neuralgia has been described in numerous instances.[24]
- **TENS:** The treatment of post-herpetic neuralgia with transcutaneous electrical nerve stimulation (TENS) has been effective. In the literature it is stated that, amitriptyline, topical capsaicin, and transcutaneous electrical nerve stimulation were suggested above antiviral medication are useful for the treatment of post-herpetic neuralgia.[24]

CONCLUSION

Herpes Zoster has drawn attention because of its diverse clinical presentation, which is crucial in the differential diagnosis of illnesses and signals a reactivation of VZV in the host. Different clinical symptoms of Herpes Zoster are possible, some of which carry a higher risk of consequences. Particularly with regards to individuals with comorbidities and immunocompromised patients, the knowledge on Herpes Zoster infection in oral mucosa is still developing.

REFERENCE

1. Patil A, Goldust M, Wollina U. Herpes Zoster: A Review of Clinical Manifestations and Management, 2022; 14: 1-3.
2. Strommen GL, Pucino F, Tight RR, Beck CL. Human infection with herpes zoster: etiolgy, pathophysiology, diagnosis, clinical course and treatment. Pharmacotherpy, 1988; 8: 52-68.
3. Carmichael JK. Treatment of herpes zoster and post herpetic neuralgia. Am Fam Pract., 1991; 44: 203-10.
4. Millar EP Troulis MJ. Herpes Zoster of the trigeminal nerve: The dentist's role in diagnosis and treatment. Jan Dent Assoc, 1994; 60: 450-3.
5. Vineet DA, Mitra R, Baskaran P, Mishra S. Orofacial Herpes Zoster: A Case Report With A Detailed Review Of Literature, 2013; 4: 976-1225.
6. Wood MJ, Shukla S, Fiddian AP, Crooks RJ. Treatment of acute herpes zoster: effect of early (< 48 h) versus late (48-72 h) therapy with acyclovir and valaciclovir on prolonged pain. J Infect Dis., 1998; 178: 81-4.
7. Beutner KR, Friedman DJ, Forszpaniak C. Valaciclovir compared with acyclovir for improved therapy for herpes zoster in immunocompetent adults. Antimicrobial Agents Chemotherapy, 1995; 39: 1546-53.
8. Gupta R, Gupta P, Gupta S. Management of Herpes Zoster: A Review, 2015; 4(3): 165-8.
9. Whitley RJ, Weiss H, Gnann JW. Acyclovir with and without prednisone for the treatment of herpes zoster. A randomized, placebo-controlled trial. The National Institute of Allergy and Infectious Diseases Collaborative Antiviral Study Group. Ann Intern Med., 1996; 125: 376-83.
10. Wood MJ, Johnson RW, McKendrick MW. A randomized trial of acyclovir for 7 days or 21 days with and without prednisolone for treatment of acute herpes zoster. N Engl J Med., 1994; 330: 896-900.
11. Kochar DK, Agarwal RP, Joshi A, Kumawat BL. Herpes zoster and post- herpetic neuralgia – a clinical trial of aspirin in chloroform for anodyne. J Assoc Physicians India, 1998; 46: 337-40.
12. Bowsher D. The effects of pre-emptive treatment of postherpetic neuralgia with amitriptyline: a randomized, double-blind, placebo-controlled trial. J Pain Symptom Manage, 1997; 13: 327-31.
13. Stranska R, Schuurman R, Nienhuis E. Survey of acyclovir-resistant Herpes simplex virus in the Netherlands: prevalence and characterization. J Clin Virol, 2005; 32: 7-18.

14. Carmichael JK. Treatment of herpes zoster and postherpetic neuralgia. Am Fam Physician, 1991; 44: 203-10.
15. Bone K, Mills' S. Principles and Practice of Phytotherapy. Edinburgh, UK: Churchill Livingstone, 2000: 41: 23-9.
16. Pompei R, Flore O, Marccialis MA. Glycyrrhizic acid inhibits virus growth and inactivates virus particles. Nature, 1979; 281: 689-90.
17. Pieroni A. Medicinal plants and food medicines in the folk traditions of the upper LuccaProvince, Italy. J Ethnopharmacology, 2000; 70: 235-8.
18. Hijikata Y, Yamada S. Effect of Ganoderma lucidum on postherpetic neuralgia. Am J Chin Med., 1998; 26: 375-81.
19. Devulder JE. Postherpetic ophthalmic neuralgia. Bull Soc Belge Ophtalmol, 2002; 285: 19-23.
20. Vynograd N, Vynograd I, Sosnowski Z. A comparative multi-centre study of the efficacy of propolis, acyclovir and placebo in the treatment of genital herpes (HSV). Phytomedicine, 2000; 7: 1-6.
21. Vijayan P, Raghu C, Ashok G. Antiviral activity of medicinal plants of Nilgiris. Indian J Med Res., 2004; 120: 24-9.
22. Sumita K, Kogure K, Sasaki T. Acupuncture therapy of depression (2): theory and therapy of depression in traditional Oriental medicine. J Jpn Acup Moxibust, 1988; 47: 6-13.
23. Hui F, Cheng A, Chiu M, Vayda E. Integrative approach to the treatment of postherpetic neuralgia:a case series. Altern Med Rev., 1999; 4: 429-35.
24. Wulf H, Maier C, Schele H. The treatment of zoster neuralgia. Anaesthetist, 1991; 40: 523-9.