

Diagnosis and Treatment of Recurrent Herpes Labialis: A Case Report

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ABSTRACT

Introduction: Reactivation of herpes simplex virus (HSV)-1 can cause recurrent herpes labialis. This is a lesion that clinically consists of multiple vesicles that can break into erosive areas covered with crusts on the vermilion and surrounding skin. The lesions may recur, be triggered by systemic factors including; stress, menstruation, and local stimuli such as injury; sun exposure, and are usually preceded by prodromal symptoms.

Case: a 44-year-old woman came to the Department of Oral Medicine at the Dental and Oral Hospital of the University of Jember with complaints of small blisters and peeling on the outer right corner of her mouth. The patient has had these complaints since 3 days, feels pain especially when eating and talking accompanied by not feeling well. The patient had experienced the same illness several years ago and relapsed again when experiencing stress and fatigue. The patient has no history of allergies, either to drugs or food.

Treatment: Topical antiviral drugs are given in the form of 5% acyclovir cream and supportive therapy in the form of multivitamin tablets.

Conclusion: Recurrent Herpes labialis caused by HSV-1 can be treated with topical antiviral drugs and multivitamin tablets.

KEYWORDS: HSV-1, Recurrent Herpes Labialis, Treatment

ARTICLE DETAILS

Published On:
16 June 2023

Available on:
<https://ijmscr.org/>

INTRODUCTION

Herpes labialis, also known as cold sores or fever blisters, is a reactivation of a herpes simplex virus infection which was originally a primary infection caused by HSV-I, namely primary herpetic stomatitis. Although the cause of the infection is the same, the manifestation of primary herpetic stomatitis is different from herpes labialis. In Primary herpetic gingivo stomatitis occurs in the oral mucosa and gingiva, whereas in herpes labialis the location is in the vermilion and surrounding skin, which appear after prodromal symptoms of fever, headache, malaise, nausea, vomiting, and decreased appetite. Symptoms begin with a burning sensation followed by grouped vesicles within 24 hours, which rupture to form superficial erosions, then covered with crusts.(Khasbage S, 2017) Herpes labialis can recur, usually appearing on the vermilion of the lips and surrounding skin. Before the appearance of the lesion, it is usually preceded by prodromal symptoms such as chills, burning or pain at the site of the appearance of the lesion. Pain generally occurs in the first two days. The lesions appear

sequentially from papules, vesicles, ulcers or erosions, crusting and healing phases (Sari & Larasakti, 2021).

Stressful conditions in patients can occur both physically and emotionally, these stressful conditions can trigger the reactivation of the HSV-1 virus. During stressful conditions there will be a decrease in CD4 T cells and CD8 T cells so that they cannot protect the body from the latent HSV-1 virus and reactivation occurs(Ganesha et al., 2021). Handling in cases of HSV-1 virus infection includes causative therapy and supportive therapy.

CASE REPORT

A 44-year-old woman came to the Department of Oral Medicine at the Dental and Oral Hospital of the University of Jember with complaints of several small blisters appearing on her outer right corner of mouth. The patient feels uncomfortable, feels hot in the corner of the mouth on the right since 3 days ago, feels uncomfortable especially when talking and eating. Prior to the appearance of the lesions, the patient had fever and headache since the previous 3 days. The

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patient previously had the same complaint several years ago, especially when stressed and tired. The patient has no history of allergies, either to drugs or food.



Figure 1. Lesions in the form of vesicles, multiple, 1-2 mm in diameter, yellowish white with reddish edges, irregular in shape with clear boundaries, accompanied by desquamation and crusting

General condition of the patient is normal, with height/weight 150 cm/55 Kg, blood pressure 125/80 mmHg, pulse 74 beats per minute, and body temperature 36°C. The patient has no systemic disease and has not been taking any medication in the past 6 months. The patient does not have smoking habits or other bad habits, and his social condition is good. Examination results on the salivary glands and lymph nodes were normal. On the outer corner of the right lip has vesicles, multiple, 1-2 mm in diameter, yellowish white with reddish edges, irregular in shape with clear borders, accompanied by desquamation and crusting, and painful (Figure 1).

Case Management

Based on the subjective and objective examination results, the patient was diagnosed with Recurrent Herpes Labialis in outer right corner of mouth. A careful history and careful clinical examination is needed, because the lesion looks very similar to angular cheilitis, especially since it is located right in the corner of the mouth. The presence of prodromal symptoms such as fever and headache before the appearance of lesions in the corner of the mouth on the right and a history of the patient having experienced the same disease several years ago can differentiate this case from angular cheilitis. Communication of information and education (IEC) is carried out regarding the diagnosis, etiology, prognosis, treatment plan and drugs to be given to patients. The therapy given is causative therapy using topical antiviral drugs in the form of 5% Acyclovir cream, applied 4 times a day and supportive therapy using multivitamin tablets taken once a day. Patients are instructed to use the drug as directed, eat a variety of foods and get enough rest. Then instructed to control 7 days after the first visit.

At the second visit after 7 days, a control was carried out to evaluate the treatment that had been carried out. Patients routinely use and consume drugs that are given regularly according to recommendations. The patient no

longer complained of pain in the outer corner of the mouth on the right. Objective examination also showed that the extraoral lesion in the corner of the mouth on the right had healed. The patient is now able to eat and drink as usual and carry out activities as usual until the therapy is complete.



Figure 2. Conditions during control, the lesion on the right corner of the mouth had healed.

DISCUSSION

Herpes Simplex Virus (HSV) is a family of Herpes viridae which consists of eight viruses, including cytomegalo virus, varicella zoster virus, eipsteinbarr, and human herpes virus VI associated with roseola infantum, and human herpes virus VII associated with roseola exanthem virus. subitem, pityriasisrosea, and human herpes virus VIII associated with Kaposi's sarcoma and lymphoma. Herpes Simplex Virus has two types of viruses, namely type 1 causes soft tissue lesions in the oral cavity and type 2 causes lesions on the genitalia (Harlina et al., 2014; Mandasari et al., 2018). Acute herpetic gingivostomatitis and recurrent herpes labialis are common oral and peri-oral mucosal diseases caused by herpes simplex virus type 1 (HSV-1). Infection with herpes simplex virus type 2 (HSV-2) can also cause primary herpes labialis but rarely causes recurrence or recurrence. Recurrence of herpes labialis can be triggered by systemic factors, including stress, menstruation, fever and local stimuli such as injury, sun exposure and dental procedures (Cawson, 2013).

The HSV-1 virus will penetrate the mucosal surface and be transmitted through oral secretions, spread through respiratory droplets or through direct contact with infected saliva. Herpes simplex virus enters host cells through the interaction of several glycoproteins on the surface of the viral envelope with host cell surface receptors. Glycoprotein B (gB) in the virus will bind to the heparin sulfate (HS) receptor on host cells so that the HSV-1 virus will settle in the dorsal ganglia, especially the trigeminal nerve ganglion and can be reactive if there is a trigger (Suniti & Setiadhi, 2018).

This form of reactivation of the HSV-1 virus can be triggered if there is a decrease in immunity due to changes in weather, fever, sun exposure, emotional stress, trauma, menstruation, systemic diseases, allergies, and immunosuppression. In immunocompromised patients, recurrent lesions are more aggressive and take longer to heal (La Selva et al., 2020).

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The trigger factor becomes a stimulus in the sensory nucleus where the virus is dormant in the latent phase, both in the central and peripheral nerves. When virus reactivation occurs, sufferers usually feel tingling, itching and erythema in the affected area, whereas secondary infection often occurs in the labial area or outside the vermilion border. The next phase is the inflammatory phase which usually occurs on the first day, the virus begins to produce and infect nerve endings. The cells will react to the invasion of the virus which is characterized by erythema. On the second to third day there is a pre-afternoon phase which is characterized by the appearance of papules and vesicles that feel itchy and sensitive to touch (Sari & Larasakti, 2021).

In this case report, it is suspected that the trigger factor for HSV recurrence is due to emotional stress. The stressful condition of the patient is known from the results of the anamnesis of the patient which says that in the last month the patient has experienced stress and fatigue from taking care of promotion files. Physical and mental stress can cause an increase in ACTH secretion which results in an increase in cortisol levels through increased activity of the Hypothalamus–Pituitary Axis which then stimulates the adrenal glands to modulate immune interactions. Reactivation of the latent phase of HSV-1 in these patients is possibly due to increased levels of endogenous corticosteroids produced by the adrenal cortex during times of stress. Under conditions of stress, both physical and psychological, it causes a reduction in circulating immune cell populations such as cytokines (IL-6, TNF α) B lymphocyte cells, NK cells, (Ganesha et al., 2021).

Therapy in this case was in the form of causative and supportive care using topical antivirals, namely 5% acyclovir cream and multivitamins. Because the patient's general condition is good, for the treatment of infection in this case it is enough to use topical drugs that are applied to the lesion area. (Elish et al., 2004) Viral thymidine kinase (HSV-1, HSV-2 and VZV) converts acyclovir to acyclovir monophosphate, which is then converted to acyclovir diphosphate by cellular guanylate kinase, and finally to acyclovir triphosphate by phosphoglycerate kinase, phosphoenolpyruvate carboxykinase, and pyruvate kinase. Acyclovir triphosphate competitively inhibits viral DNA polymerase and viral DNA replication. Furthermore, acyclovir triphosphate inhibits DNA synthesis by acting as a chain terminator. Acyclovir is selective and low in cytotoxicity to normal cellular thymidine kinase, uninfected cells do not use acyclovir effectively as a substrate. The use of acyclovir is contraindicated in patients who have hypersensitivity, including renal failure, immunocompromised host, potential risk of thrombotic thrombocytopenic purpura (TTP), and hemolytic uremic syndrome (Mandasari et al., 2018).

Host immunity is a key factor in viral infection. Improving the immune system, both natural and adaptive, can be achieved by improving nutrition, improving psychological

conditions and administering multivitamins. Multivitamin Becom-zet® which contains Vitamin B complex Vitamin C, Vitamin E and Zinc which acts as a catalyst and regulator of biochemical reactions in the body. Vitamin B is a water-soluble vitamin that also has a role as a cofactor and coenzyme and contributes to the immune response through T cells CD8 and NK cells. It can increase the patient's immune system through adequate intake of the vitamins. Multivitamins needed and prevent the occurrence of functional metabolic disorders that cause reduced vitamin intake also accelerates the change of proline and lysine residues in procollagen to hydroxyproline and hydroxylysine in collagen synthesis (Ganesha et al., 2021; Haryana et al., 2022). This process is very important for speed up the healing process. Patients are also advised to manage stress and adequate rest and maintain nutrition and hydration to prevent recurrence of Herpes Labialis.

CONCLUSION

Recurrent herpes labialis is a disease caused by reactivation Herpes Simplex Virus type-1 is characterized by the onset of prodromal symptoms before the extraoral lesions appear. The lesions are on the vermilion and surrounding outer skin in the form of multiple vesicles that can break into erosive areas covered with crusts. Therapy that can be given to cases of recurrent herpes labialis are topical antivirals and oral multivitamins.

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