Cold Sores: Signs, Symptoms and Treatment of Primary Herpetic Gingivostomatitis and Herpes Labialis. Should we be Treating Patients with Active Cold Sores?

Aim: To provide an overview on the causes, symptoms and treatment of patients who present with Primary Herpetic Gingivostomatitis and Herpes Labialis (cold sores).

Objectives: On completion of this verifiable CPD article the participant will be able to demonstrate, through completion of a questionnaire, the ability to:

- Identify definitions of Primary Herpetic Gingivostomatitis and Herpes Labialis
- Know the viruses responsible for Primary Herpetic Gingivostomatitis and Herpes Labialis
- Identify the causes, symptoms and treatments for Primary Herpetic Gingivostomatitis and Herpes Labialis
- Understand the principles of providing Standard Precautions in infection prevention
- Be able to apply clinical knowledge in how best to treat/not to treat patients with Primary Herpetic Gingivostomatitis and Herpes Labialis and identify the risks of providing dental treatment.
- Know when to consider referral for further advice

Introduction

Herpes Simplex virus is categorised into two types: herpes simplex type 1 (HSV-1) and herpes simplex virus type 2 (HSV-2). HSV-1 is mainly transmitted via oral to oral contact to cause oral herpes but can also cause genital herpes. HSV-2 is sexually transmitted infection that causes genital herpes.[1]

Herpetic Gingivostomatitis is often the initial presentation of the first herpes simplex infection. Approximately a third of people who contract this 'primary' infection go on to develop herpes labialis (cold sores) in later life.[2]

Most cases of herpetic gingivostomatitis and herpes labialis, are caused by HSV-1. As it is so contagious, it is estimated that up to 67% of the population has the HSV-1 virus globally, and 11% have HSV-2. Once infected, the virus never leaves the body.[1]

Many people who carry HSV-1, may be unaware that they have it. However, approximately 1 in 3 who carry the virus may have recurrent cold sores.[2] Patients may present in the surgery with these cold sores and clinicians need to be aware of the signs, symptoms, causes and possible complications of such infections and make decisions as to whether to treat these patients for routine, non-urgent dental appointments.

This article will discuss the causes, signs, symptoms and management of patients with Primary Herpetic Gingivostomatitis and Herpes Labialis.

Primary Herpetic Gingivostomatitis

Herpetic gingivostomatitis most often results from initial infection with HSV-1 of the gingiva and oral mucosa. 90% of cases are caused by HSV-1. Although it can occur in adults, it most commonly occurs in children under the age of 5, with a peak prevalence between 2 and 3 years. It can be asymptomatic or mild in young children but is associated with more severe general symptoms in the elderly.[3] It has been shown to be "equally distributed amongst gender and race groups and is not found to have a particular seasonal or geographic distribution."[4]

Herpetic Gingivostomatitis is usually spread through the saliva of the infected individual or by direct contact with a lesion or sore.[5] Recurrent herpetic gingivostomatitis may be associated with immunosuppression.

Extraoral herpetic gingivostomatitis [6]

Intraoral herpetic gingivostomatitis[6]

Symptoms

Individuals may go through a period of feeling feverish and having general malaise before developing clinical symptoms. The following symptoms may be apparent:

- Pain around the gums and mouth
- Red, shiny, swollen gums with varying degrees of oedema and gingival bleeding
- Vesicles on the gingival, labial, and buccal mucosa; soft tissues; pharynx; sublingual mucosa; and/or, tongue
- Ulcers in the mouth. Approximately 24 hours after appearing, the vesicles rupture and form small, painful ulcers with a red, elevated halo like margins and a depressed, yellow or greyish white central portion. These ulcers may coalesce into larger ulcers

- Fever
- Nausea
- Drooling, especially in children
- Halitosis
- Difficulty in swallowing
- Reluctance to eat or drink which can lead to dehydration
- Some adult patients may present with pharyngotonsillitis [3,5]

Treatment

The infection is self-limiting, and the lesions resolve in around 10-14 days. Treatment usually includes rest, antipyretics and analgesics. It is essential that the patient receives adequate hydration and therefore it is important that the pain is managed with analgesics to make the individual more comfortable in order to promote fluid intake.[4] It may be more comfortable to eat bland, soft food such as mashed bananas or warm oatmeal.[5]

A systemic antiviral agent may be prescribed in the early stages, especially if the patient is immunocompromised or refuses to drink. Studies have shown that administration of oral acyclovir within 96 hours of onset can result in reduced viral shedding, early resolution of lesions and improvement in eating difficulties.

Barrier lip creams can also be recommended to prevent adhesions in patients with active herpetic gingival stomatitis.[4]

Herpes Labialis (cold sores)

Herpes labialis (cold sores) are usually caused by HSV-1 infection. However, it is possible for HSV-1 to cause sores on the genitals and for HSV-2 to cause sores on the mouth.

After the primary infection with HSV-1, the virus enters a latent phase at the nerve ganglion (usually the trigeminal ganglion) and remains dormant until it is reactivated. Many people have the herpes simplex virus but have no symptoms.

Causes of Reactivation

There are certain triggers that can reactivate HSV-1 and result in cold sores:

- Exposure to sunlight or windy conditions
- Viral infection or fever
- An injury to the mouth or dental treatment/surgery
- Fatigue
- Changes in the immune system
- Hormonal changes, such as the menstrual period
- Emotional or physical stress.[7]

It is important to remember that cold sores are a symptom of ongoing infection rather than a new infection. The sores usually recur in the same place.

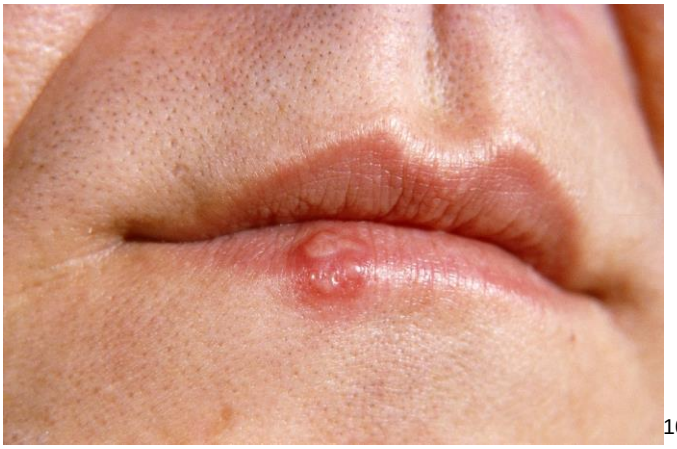
Stages

A cold sore goes through five stages:[8]

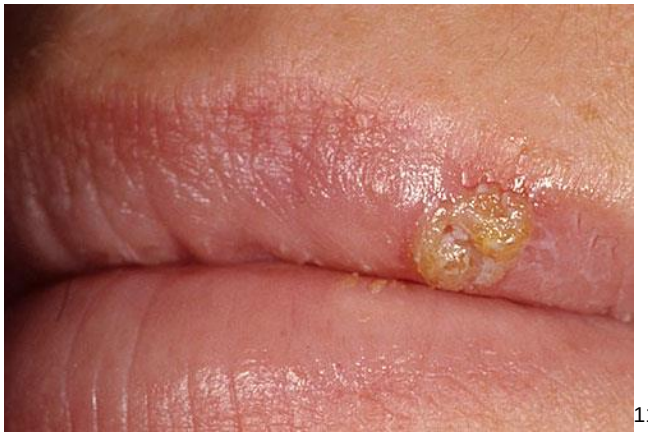
Stage 1: Tingling - Tingling and itching occurs approximately 24 hours before blisters erupt

 [9]

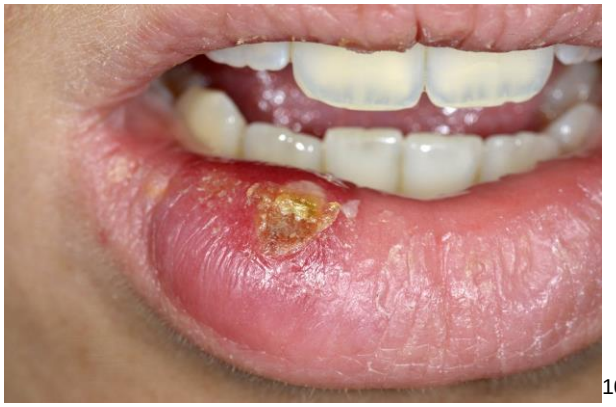
Stage 2: Blistering- Fluid filled blisters appear

 [10]

Stage 3: Weeping- The blisters burst, ooze, and form painful sores

 [11]

Stage 4: Crusting - The blisters dry out and scab over, causing itching and cracking

 [10]

Stage 5: Healing- The scab falls off and the cold sore heals.

Treatment

The National Institute for Health and Care Excellence (NICE) state that herpes labialis lesions usually resolve within 10-14 days of symptom onset, without scarring. If symptoms worsen or do not improve significantly in 5-7 days, it is recommended that the patient seeks medical advice.

Treatment can involve the following:

- Creams to ease pain and irritation
- Antiviral creams to speed up healing time
- Cold sore patches to protect the skin while it heals[10]

Studies have shown that only prompt topical or oral therapy will alleviate symptoms of herpes labialis. Antiviral medications are best applied before the vesicles appear.

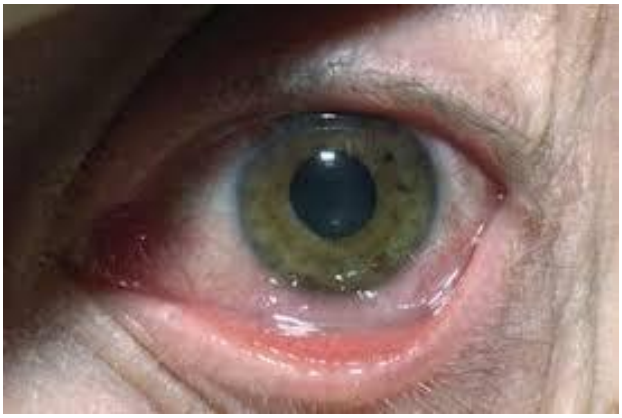
Complications of Infection with HSV-1

People who have weakened immune systems are at higher risk of complications from the virus. Disseminated infection and/or persistent ulceration due to HSV can be serious in immune compromised patients. Medical conditions and treatments that increase the risk of complications include:

- HIV/AIDS
- Severe burns
- Eczema
- Cancer chemotherapy
- Anti-rejection drugs for organ transplants[7]

Dehydration is a risk in HSV-1 infection. Children are particularly at risk of becoming dehydrated. The virus can also cause problems in other areas of the body, including:

Eyes

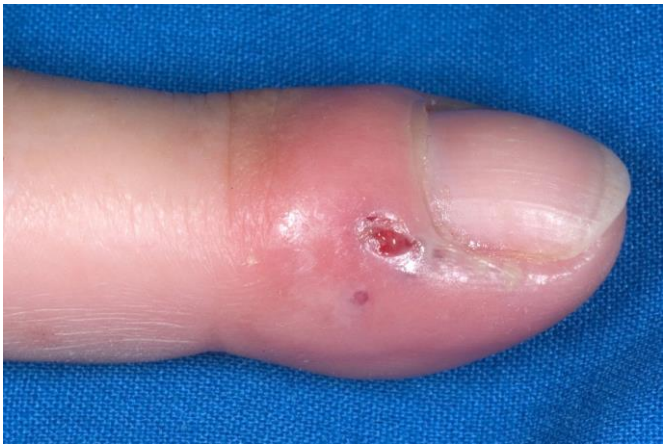


It is possible for the virus to cause ocular herpes. It is important to get medical help if this is suspected, as HSV-1 eye infection can lead to vision problems or blindness. Usually only one eye is affected.

Symptoms of herpes simplex eye infection can include

- A red eye
- Eye pain
- Swelling around the eye
- Sensitivity to bright light
- A watering eye
- Blurred vision[12]

Fingers



Both HSV-1 and HSV-2 can be spread to the fingers. Herpetic whitlow is a painful infection of the finger and can reoccur. Symptoms include:

- A finger that is red, swollen and painful
- Blisters or sores on the fingers[13]

Herpetic whitlow is documented to be most common in healthcare providers and in children who suck their thumbs. However, it is most common in dental hygienists and respiratory therapists.[14]

Nervous System

Cranial/ facial nerves may be infected by HSV which may produce temporary paralysis of the affected muscles. [15]

Skin Infection- Eczema Herpeticum

[16]

In people with some skin conditions such as atopic dermatitis, HSV can result in severe and widespread infection and may require oral or IV antibiotics.

Brain or spinal cord

Although very rare, HSV can cause Encephalitis, especially in people with weakened immune systems. Encephalitis is a serious condition in which the brain becomes swollen, possibly causing brain damage and even death. [15]

Should We Treat Patients with HSV-1 Infection?

As health care professionals, we have a duty to apply standard precautions to infection control. Standard precautions include hand hygiene, personal protective equipment, injection safety, environmental cleaning, respiratory hygiene and transmission-based precautions. The aim of these is to protect healthcare providers from infection and prevent the spread of infection from patient to patient.

However, despite the application of standard precautions, The National Institute for Health and Care Excellence (NICE) advise that **elective dental treatment is deferred until lesions are fully healed** and state the following:

"The recommendation on deferring elective dental treatment until lesions are fully healed is based on the fact that aerosolization of the virus may occur during dental procedures, putting the person and oral healthcare providers at risk for possible infection or reinfection." [17]

As a clinician, treating a patient with HSV-1 could lead to the following risks:

- The virus is spread through saliva which is impossible to avoid
- Touching the lesion and moving a gloved hand across the patient's lip, could lead to the spread of the virus
- Gloves may develop minute tears which can leave the clinician at risk of herpetic whitlow
- Even with protective eyewear, there is the risk of ocular herpes which can lead to blindness[18]

Therefore, all patients should be advised to reschedule their appointment for elective dental treatment until the lesions are fully healed.

Advice for Patients

Patients who present with HSV-1 can be given the following advice:

- Defer elective dental treatment until lesions are fully healed
- Reassure patient that infection is usually self-limiting and lesions do not scar
- Explain importance of adequate hydration to reduce risk of dehydration
- Explain that the virus is easily transmitted to others through touch
- Advise to wash hands immediately after touching a lesion
- Dab on topical preparations to minimise trauma to the lesions
- Take special care if using contact lenses to reduce transmission to the eye
- Inform parents of children with herpes labialis or gingivostomatitis that they do not need to be excluded from school
- Ask the patient to avoid trigger factors, if possible. If sunlight is a trigger, advise the use of s sunscreen or sunblock lip balm (SPF factor of at least 15)[17]

When to Seek Further Advice

The National Institute for Health and Care Excellence (NICE) advise that, hospital admission should be considered for the following patients:

- "Patients who are unable to maintain adequate hydration (especially in children)
- Patients who are immunocompromised with severe oral herpes simplex infection (these patients may need intravenous antiviral drug treatment)
- Patients who are suspected to have a serious complication of oral herpes simplex infection.[17]"

In addition, NICE advises that specialist advice or referral should be considered if a person:

- "Is immunocompromised and has recurrent oral herpes simplex infection
- Is pregnant (particularly near term) She should be advised that the risk of infecting her new baby by kissing are greatest when a woman acquires a new cold sore infection in the third trimester, particularly within 6 weeks of delivery, as viral shedding may persist in the saliva and the baby is likely to be born before the development of protective maternal antibodies.
- Has frequent (for example, 6 or more episodes in one year), persistent and/or severe episodes of recurrent oral herpes simplex infection (prophylactic oral antiviral treatment may be needed)
- Has herpes simplex associated with recurrent erythema multiforme
- Has lesions which are refractory to oral antiviral treatment in primary care (if clinically indicated) after 5–7 days.
- Has atypical lesions or the diagnosis is uncertain."[17]

Conclusion

Infection with HSV-1 is very common. Patients may present in the surgery with Primary Herpetic Gingivostomatitis or Herpes Labialis and it is important that dental staff are aware of the signs, symptoms and treatments for this infection. HSV-1 can lead to further complications and elective dental treatment should be deferred for patients with active lesions.

Personal Development Plan and Reflective Learning

This CPD is linked to the following GDC Enhanced CPD Development Outcomes:

A. Effective communication with patients, the dental team and others across dentistry, including when obtaining consent, dealing with complaints, and raising concerns when patients are at risk.
C. Maintenance and development of knowledge and skill within your field of practice.

Reflective learning is now a requirement of the GDC Enhanced Professional Development Scheme. As such, you will now be given the option to answer some reflective learning questions, before your certificate is generated. These will be:

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