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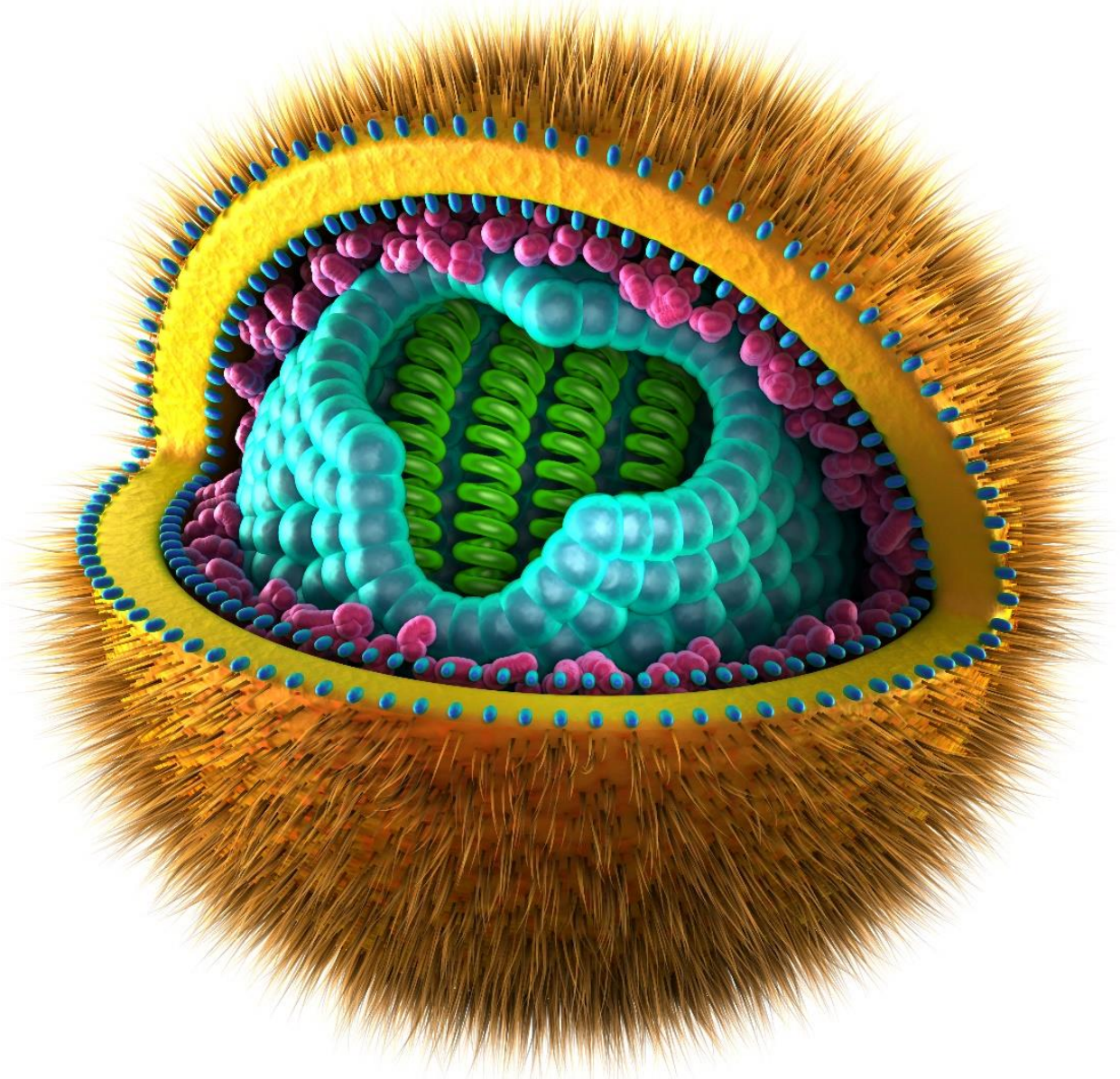
Prophylaxis and treatment of herpetic infections in aesthetic practice



Seriousness of complication		**Frequency of complication**	
Minor complication		Common	
Worrying complication	X	Occasional	
Moderate complication		Infrequent	
Serious, but not major		Rare	X
Major complication		Very rare	

Prophylaxis and treatment of herpetic infections in aesthetic practice

Definition:

"Any of several viral infections marked by the eruption of small vesicles on the skin or mucous membranes, especially herpes simplex." (From Greek, *herpein*, to creep)[1].

Introduction:

The herpes family of viruses includes Herpes Simplex Virus 1 and 2 (HSV-1 and HSV-2), Herpes Zoster Virus (HZV), Epstein-Barr Virus (EBV), Cytomegalovirus (CMV) and Human Herpes Virus 6, 7 and 8[2].

Following initial infection, the virus lies dormant in the dorsal root nerve ganglion and reactivation can occur later. Factors related to reactivation of various herpes viruses include local trauma, systemic stress, mental tension, fatigue and exposure to bright light[3].

It is thought that reactivation can be provoked by direct damage to the nerve axon by a needle during an aesthetic procedure. Tissue manipulation, dermal injury and/or an inflammatory reaction may also play a role in this process. However, in the case of dermal filler injections, hyaluronic acid has been demonstrated to act as a protective agent and prevent viral replication[2].

Incidence:

Globally, it is estimated that 3.7 billion people under the age of 50 (67%) have HSV-1 and 417 million people aged 15-49 (11%) have HSV-2 infection[4]. For the majority, infection with HSV is often subclinical and asymptomatic[5]. The risk of herpes reactivation following dermal filler injection is rare with an incidence of HSV-1 reactivation estimated to be less than 1.45% cases and herpes zoster even rarer[6]. Post-procedure infection with HSV was seen in 7.4% of patients post laser resurfacing regardless of prior history[7].

Signs and symptoms:

The presence of a cold sore following an aesthetic procedure can be devastating for the patient due to discomfort, pain and potential for scarring, particularly after an ablative procedure[8].

If a herpetic infection occurs following an aesthetic treatment, signs and symptoms often appear 24-48 hours afterwards[2], initially as a neuralgic pain or a tingling sensation and there may be some pruritus and dysaesthesia. These prodromal symptoms may be accompanied by general malaise or fever and last 6-48 hours[9]. HZV will appear as vesicles or blisters in a unilateral dermatomal distribution whereas HSV may be bilateral and may appear in several distinct areas. Herpetic lesions appear initially as thin walled intra-epidermal vesicles which subsequently burst, crust and then heal. They are typically circular ulcerations covered by a yellowish film with surrounding erythema and there is often some weeping from the ulcerations. In otherwise healthy individuals the recurrence of symptoms is usually mild and self-limiting, healing within 5-7 days without scarring[9].

The appearance of a herpetic outbreak can sometimes be confused with a bacterial infection such as impetigo[9] so ensuring the

correct diagnosis is essential to treat the complication effectively.

When a blistering reaction occurs outside of the areas typical of herpes eruptions or in a high-risk area for necrosis, vascular compromise should be excluded[10] (Please refer to the Aesthetic Complications Expert Group guidelines on Management of Impending Necrosis). The timing of presentation is important as typically skin necrosis will be immediate or within hours and herpetic lesions usually appear within days. However, necrosis presenting a few days after dermal filler injections has been observed with hyaluronic acid products.

Areas of caution:

Virus reactivation will tend to occur in the area that has been treated but may affect neighbouring areas and the most common sites are the perioral area and the nasolabial folds[2]. The pattern of reactivation and subsequent eruption depends upon the causative virus, the trigeminal ganglion is often due to HSV-1 and the ophthalmic branch of the trigeminal nerve is frequently caused by HZV.

Minimising the risks:

Medical history is extremely important and documenting previous herpetic outbreaks, including cold-sores (HSV) and shingles (HZV), frequency of attacks, recognised or personal triggers, whether they have been provoked by previous procedures and any further complications that may have arisen as a result (including post-herpetic neuralgia, cranial or peripheral nerve palsies, encephalitis, myelitis, visual loss[11]). Immunocompetence is important and if the immune status of the patient is compromised (whether acquired or medically induced), prophylaxis or abandoning the procedure should be considered. If the patient has prodromal symptoms, an active eruption, or likely to be exposed to usual triggers within 2 weeks, aesthetic procedures should be delayed until symptoms have completely resolved and risk factors minimised[12].

Risk of post-herpetic neuralgia (pain persisting 120 days after disease onset) increases with patient age and it has been estimated that 13-40% of patients over the age of 60 years still have post-herpetic neuralgia six months after their outbreak[12]. A lower threshold for the use of prophylaxis and prompt treatment of an outbreak in these patients is recommended.

Nanni and Alster published a study that showed following laser resurfacing procedures, postoperative infection with HSV occurred in 14 patients (7.4%), half of these without previous known infection[7]. Anti-HSV prophylaxis is recommended with CO_2 laser resurfacing, even in patients with no history of HSV[7].

The Aesthetic Complications Expert Group and many leading experts would advocate the prophylactic use of anti-viral medication for patients that have previously had a herpetic outbreak following an aesthetic procedure[13,14] however the evidence for this is lacking.

Treatment:

Guanine nucleoside analogues, such as acyclovir and valaciclovir, are antiviral drugs that inhibit viral replication and are converted into their active drug component within an infected cell by the action of viral thymidine kinase. Most viral replication occurs within the first 24 hours of infection so prompt treatment at the prodromal stage, prior to lesions erupting,

is recommended to limit epithelial damage and possible secondary complications[9].

Licensed oral drugs for the treatment of herpes viridae include aciclovir, valaciclovir and famciclovir. Aciclovir and Valaciclovir have comparable efficacy and side effects[13] so the choice of drug depends on the preference of the patient, drug cost, dosage regimen and likely compliance[7]. Valaciclovir has greater bioavailabilty and absorption but is more expensive[15] and so first line treatment is often with aciclovir. The most frequent side-effects are headache, abdominal pain, diarrhoea and vomiting and if side-effects occur, it is worth prescribing an alternative. There is no good quality evidence that topical preparations are effective in reducing pain or healing time compared with placebo[16].

Most episodes of herpes labialis are self-limiting and the evidence on the benefits of oral antivirals is inconclusive. Treatment is not recommended for patients with mild-to-moderate recurrent episodes and no other significant medical history unless they have had an invasive treatment which has previously precipitated an outbreak. If oral treatment is indicated, it needs to be initiated at the onset of prodromal symptoms which may pose difficulties in clinical practice[9]. Treatment with oral antivirals in otherwise healthy individuals is only indicated for severe or persistent episodes[9].

When a patient reports a cold sore eruption following a low risk, non-invasive procedure, the patient should be given advice on managing symptoms and preventing spread and auto-contamination. If symptoms worsen or do not improve significantly in 5-7 days, the patient should be reviewed and possibly referred to exclude other conditions effecting immunocompetency[9].

Be aware that herpetic eruptions may also develop secondary bacterial infections and require topical or systemic antibiotics in addition to anti-viral treatment[10,17]. The initial presentation may even be impetigenised due to secondary bacterial infection and require dual therapy at the outset (Please refer to the Aesthetic Complications Expert Group guidelines on Management of Acute Skin Infections).

If there is any ocular involvement, an urgent opinion from an Ophthalmologist is essential as rarely surgical debridement of the cornea may be required[17].

Treatment of herpetic infection		
	Herpes Simplex Virus (Cold sores)	**Herpes Zoster Virus (Shingles)**
1st-line treatment	Aciclovir 200mg Five Times A Day for 5 Days (Extended duration if healing incomplete)	Aciclovir 800mg Five Times A Day for 7 Days
2nd-line treatment	Valaciclovir 500mg Twice A Day for 5 Days	Valaciclovir 1g Three Times A Day for 7 Days
Immunocompromised or high risk patients	Aciclovir 400mg Five Times A Day for 5 Days (Extended duration if healing incomplete)	Aciclovir 800mg Five Times A Day for 7 Days

Prophylaxis of herpetic infections	
1st-line treatment	**2nd-line treatment**
Aciclovir 400mg Twice A Day For 5 Days Three Times A Day if immunocompromised or high risk	Valaciclovir 500mg Once A Day For 5 Days Twice A Day if immunocompromised or high risk

Prophylaxis

There are no randomised controlled trials to indicate optimum time to commence episodic prophylaxis. Consensus dictates treatment should not commence before two days prior to treatment and no later than the day of treatment and continue for 5 days, or until the skin has healed.[18,19,20,21]

If the patient suffers a recurrence despite prophylaxis, consider prolonging the treatment course. Provide self-help advice on the prevention of auto-inoculation and transmission to others. Review if symptoms do not improve or worsen after 7 days and consider referral to their General Practitioner for further investigation[9].

Prophylactic treatment is recommended in the following circumstances:

- >3 spontaneous eruptions per year[2]
- Previous eruption at any time because of a procedure[13,14]
- Lip augmentation and previous HSV eruption at any time[9,12]
- Facial resurfacing procedures, such as non-fractional laser resurfacing and deep chemical peels[18].
- Immunocompromised
- Immunosuppressed

Oral antivirals do not prevent progression of latent infection.

Follow-up:

All patients presenting with a herpetic eruption post procedure should be supported to manage their condition, carefully followed-up and photographs should be taken to objectively assess over time. If the practitioner is unable to prescribe the required treatment or has been unsuccessful in dealing with the complication, it is important to make an onward referral to a practitioner who has more experience in this area. In accordance with this guidance, the patient should be offered appropriate prophylactic treatment for subsequent treatments in the future.

For further information on contraindications, cautions, drug interactions, and adverse effects, see the British National Formulary or Electronic Medicines Compendium[21].

Cold Sores: Patient Information Leaflet

If you suffer from cold sores it is important to tell your practitioner who may prescribe medication, in advance or at the time of treatment, to help reduce your risk of getting a cold sore post procedure.

Before and after treatment try to avoid trigger factors such as ultraviolet light (the sun or sun beds), physical or emotional stress, fatigue, fever, menstruation, immunosuppression, extremes in temperature, mouth or lip trauma and dental or surgical procedures. If sunlight is a trigger, use sunscreen or sunblock and lip balm (sun protection factor 15 or greater) to help reduce the likelihood of an outbreak.

Prophylactic treatment cannot always prevent cold sores occurring, if you have any symptoms please advise your cosmetic practitioner and take the following precautions to prevent transmission to others and to prevent it spreading further:

- Avoid touching the lesions.
- Wash hands with soap and water immediately after touching the lesions.
- Avoid kissing and oral sex until lesions have fully healed
- Do not share items that come into contact with lesions (e.g. lipstick or lip balm, face towels).
- Topical preparations should be dabbed on to minimise mechanical trauma to the lesions.
- Take care if using contact lenses as there is a risk of transmission to the eye.
- Defer further aesthetic or dental treatment until the lesions have fully healed.
- Seek medical advice if your symptoms worsen (for example the lesion spreads, new lesions develop, or there is persistent fever or difficulty taking fluids) or no significant improvement is seen after 5-7 days.

The British Herpes Association gives helpful advice and information. www.herpes.org.uk

Herpes Viruses Association

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The ACE Group have produced a series of evidence based and peer reviewed guidelines to help practitioners prevent and manage complications that can occur in aesthetic practice. These guidelines are not intended to replace clinical judgement and it is important the practitioner makes the correct diagnosis and works within their scope of competency. Some complications may require prescription medicines to help in their management and if the practitioner is not familiar with the medication, the patient should be appropriately referred. Informing the patient's General Practitioner is considered good medical practice and patient consent should be sought. It may be appropriate to involve the General Practitioner or other Specialist for shared care management when the treating practitioner is not able or lacks experience to manage the complication themselves. Practitioners have a duty of care and are accountable to their professional bodies and must act honestly, ethically and professionally.

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