



## Prophylaxis and treatment of herpetic infections

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	

<b>Title</b>	Prophylaxis and treatment of herpetic infections		
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# Prophylaxis and treatment of herpetic infections

## 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)<sup>1</sup>.

## 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<sup>2</sup>.

Following initial infection, the virus lies dormant in the dorsal root nerve ganglion and reactivation can occur at a later date. It is thought that reactivation can be provoked by direct damage to the nerve axon by a needle during an aesthetic procedure. Tissue manipulation and 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<sup>2</sup>.

## Incidence:

Herpes Simplex Virus 1 is ubiquitous with an estimated 50% of high-socioeconomic status patients becoming seropositive by age 30<sup>3</sup>. The risk of herpes reactivation following dermal filler injection is rare with an incidence of Herpes Simplex Virus 1 reactivation estimated to be less than 1.45% cases and herpes zoster even rarer<sup>4</sup>.

## Signs and symptoms:

Signs and symptoms often appear 24-48 hours after treatment<sup>2</sup> initially as a neuralgic pain or a tingling sensation. There may be some pruritus and dysaesthesia. 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. There is often some weeping from the ulcerations.

The appearance of a herpetic outbreak can sometimes be confused with a bacterial infection such as impetigo<sup>5</sup> so ensuring the correct diagnosis is essential in order 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 seriously considered<sup>6</sup> (Please refer to the Aesthetic Complications Expert Group guidelines on Management of Necrosis).

The timing of presentation is important in this situation as skin necrosis will be immediate or within hours and herpetic lesions usually appear within days.

### **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<sup>2</sup>. 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, whether they have been provoked by previous procedures and any further complications that may have arose as a result (including post-herpetic neuralgia, cranial or peripheral nerve palsies, encephalitis, myelitis, visual loss<sup>7</sup>). Immunocompetence is obviously important and if the immune status of the patient is compromised (whether acquired or medically induced), prophylaxis or abandoning the procedure should be considered.

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<sup>8</sup>. A lower threshold for the use of prophylaxis and prompt treatment of an outbreak in these patients is recommended.

Anti-HSV prophylaxis is recommended with CO<sub>2</sub> laser resurfacing, even in patients with no history of HSV<sup>9</sup>. A 500-patient study showed postoperative infection with HSV occurred in 14 patients (7.4%), half of these without previous known infection<sup>10</sup>.

Many practitioners and the Aesthetic Complications Expert Group would advocate the prophylactic use of anti-viral medication for patients that have previously had a herpetic outbreak following an aesthetic procedure<sup>5,8</sup>.

### **Treatment:**

Prompt treatment is recommended to limit the risk of complications and post-herpetic neuralgia. There are several licensed drugs for the treatment of herpesviridae including aciclovir, famciclovir and valaciclovir. These guanine nucleoside analogues are converted into their active drug component within an infected cell by the action of viral thymidine kinase. First line treatment is often with aciclovir. The most frequent side-effects with aciclovir are abdominal pain, diarrhoea and vomiting and if this occurs it may be worth considering prescribing one of the alternatives. If the patient has an active eruption, aesthetic procedures should be delayed until it has completely resolved<sup>11</sup>

Causative agent		
	HSV	HZV
<b>1<sup>st</sup>-line treatment</b>	Aciclovir 200mg Five Times A Day for 5 Days (Extended duration if healing incomplete)	Aciclovir 800mg Five Times A Day for 7 Days
<b>Immunocompromised or high risk patients</b>	Aciclovir 400mg Five Times A Day for 5 Days (Extended duration if healing incomplete)	
<b>2<sup>nd</sup>-line treatment</b>	Valaciclovir 500mg Twice A Day for 5 Days	Valaciclovir 1g Three Times A Day for 7 Days

Aciclovir is available in a topical formulation which may be suitable for outbreaks of HSV that have occurred when there has been no breach in the skin during treatment.

Be aware that herpetic eruptions may also develop secondary bacterial infections and require topical or systemic antibiotics in addition to anti-viral treatment<sup>6,12</sup>. The initial presentation may even be impetigenised lesions 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<sup>12</sup>.

Prophylaxis is recommended in the following circumstances:

- >3 spontaneous eruptions per year<sup>2</sup>
- Previous eruption at any time as a result of a procedure<sup>5,8</sup>
- Lip augmentation and previous HSV eruption at any time<sup>6,11</sup>
- Facial resurfacing procedures<sup>9</sup>
- Immunocompromised/immunosuppressed

Prophylaxis of herpetic infections	
1 <sup>st</sup> -line treatment	2 <sup>nd</sup> -line treatment
Aciclovir 400mg Twice A Day (Three Times A Day if immunocompromised or high risk)	Valaciclovir 500mg Once A Day (Twice A Day if immunocompromised or high risk)

Prophylaxis should ideally be started 1-2 days pre-procedure and continue for 5-7 days<sup>13</sup>.

### Follow-up:

All patients presenting with a herpetic eruption should be 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.

Good follow up and support, a full explanation to the patient and appropriate consent is the best approach to stop a complication turning into a complaint!

## References

1. The Free Dictionary, <http://medical-dictionary.thefreedictionary.com/herpes>
2. Gazzola R, Pasini L, Cavallini M. Herpes virus outbreaks after dermal hyaluronic acid filler injections. *Aesthetic Surgery Journal* 2012;32(6):770-772
3. Nettar K, Maas C. Facial Filler and Neurotoxin Complications. *Facial Plast Surg* 2012;28(3):288-293
4. Kim B. Herpes reactivation after injection of dermal fillers. *ANZ J Surg* 2013;83:998
5. Sires B, Laukaitis S, Whitehouse P. Radiesse-induced Herpes Zoster. *Ophth Plastic and Reconst Surg* 2008;24(3):218-219
6. Funt D, Pavicic T. Dermal fillers in aesthetics: an overview of adverse events and treatment approaches. *Clin, Cosmetic and Investigational Derm* 2013;6:295-316
7. Gildea DH, Cohrs RJ. Neurologic complications of the reactivation of varicella-zoster virus. *N Engl J Med* 2000;342(9):635-645
8. Graber EM, Dover JS, Arndt KA. Two cases of Herpes Zoster appearing after Botulinum Toxin Type A injections. *Journal of Clinical and Aesthetic Dermatology* 2011;4(10):49-51
9. Nestor MS. Prophylaxis for and treatment of uncomplicated skin and skin structure infections in laser and cosmetic surgery. *J Drugs Dermatol* 2005;4(6):s20-25
10. Nanni CA, Alster TS. Complications of carbon dioxide laser resurfacing. An evaluation of 500 patients. *Dermatol Surg* 1998;24:315-320
11. Cohen JL. Understanding, Avoiding, and Managing Dermal Filler Complications. *Dermatol Surg* 2008;34:S92-S99
12. DeLorenzi C. Complications of injectable fillers. *Aesthet Surg J* 2013;33:561-575
13. Sherman RN. Avoiding dermal filler complications. *Clinics in Dermatology* 2009;27:S23-S32

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