



Treating skin infections in the pharmacy

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Introduction

The skin is the human body's largest organ and also the first line of defence against invasive microorganisms. Though several microorganisms come in contact with or live on the skin, they are ordinarily unable to cause an infection. Environmental factors like sun exposure, chemicals, and pollution, compromise this skin barrier allowing microorganisms to enter and cause infection. Similarly, trauma through accidents, surgery or burns can result in infection. When bacterial skin infections do occur, they can range from mild to serious and potentially life-threatening. Mild infections can be treated with over-the-counter (OTC) medications and some proven home remedies, whereas more serious infections will need to be referred to the doctor.

The pharmacy is often the first port of call for many patients with bacterial, viral, and fungal skin infections. Recognising the various types of skin infections, as well as the type of microorganism causing the infection, will help in making the best treatment recommendations.

Bacterial skin infections

Bacterial skin infections can affect the skin and soft tissue (e.g. impetigo, boils, carbuncles, and folliculitis) or the skin structure (e.g. cellulitis).

Folliculitis, furuncles and carbuncles

Folliculitis is a general term used to describe an infection of the hair follicles, commonly caused by *Staphylococcus aureus*. Initially, it may look like small red bumps or white-headed pimples around hair follicles. There can be only one infected follicle, but there are often many. The patient may experience redness, tenderness, or swelling of the affected area. It will sometimes spread to the deeper

parts of the hair follicles and form pus, becoming a furuncle or 'boil'. Carbuncles are clusters of furuncles. Folliculitis, furuncles, and carbuncles occur on any part of the body with hair, such as the face, neck, armpits, thighs, and groin area.

Mild folliculitis can be treated with topical antibiotic preparations such as mupirocin. More severe infections, like carbuncles or larger furuncles, may have to be lanced and drained. After drainage, it is important to keep the area clean with antiseptic wound cleaner or antibacterial soap. Antibiotic ointment should be applied several times a day. With more severe infections, the doctor may also prescribe oral antibiotics.

Impetigo

Impetigo is a common and highly contagious skin infection also commonly caused by *Staphylococcus aureus*. Although this infection may occur in adults, it primarily affects infants and children aged 2 to 5 years. It is usually spread through direct contact with another person who is already infected. The patient may experience tenderness, itching and then sores, or blisters. The sores rupture and ooze for a few days and then form a honey-coloured crust as the pus on the surface dries. It usually appears on the face, especially around the nose and mouth, and on hands and feet. It can also appear anywhere the skin has been broken.

Impetigo can be treated with either a topical ointment or oral antibiotic and sometimes both. Mupirocin ointment is often prescribed for topical treatment. Oral antibiotics are used for more severe infections or when the topical treatment does not resolve the infection. To prevent the infection from spreading to other parts of the body, the patient should avoid touching and especially scratching the blisters or sores. As impetigo is commonly seen in children, it may be helpful to keep their fingernails short and to encourage good hygiene. It is also important to prevent the infection from spreading to others by not sharing items such as blankets, linens, toys, or clothing.

Viral skin infections

Many viral infections, such as measles, chickenpox and rubella, result in rashes, spots, or sores on the skin. Herpesviruses often produce rashes and sores. Then there are infections where the virus

remains solely in the skin, for example, warts (caused by HPV) and molluscum contagiosum (caused by a poxvirus).

In both warts and molluscum, the infection usually clears up by itself and does not need treatment unless it is causing discomfort or psychological distress. In some cases, the skin lesions can be removed using chemicals or other procedures.

Cold sores and their treatment

Cold sores (herpes labialis) are caused by one of the most common viruses affecting humans worldwide. The herpes simplex virus (HSV) has two major types – HSV1 typically causes infection around or in the mouth, and HSV2 is responsible for genital herpes infections. Once a person has the virus, it remains in the body, lying dormant until the immune system is weakened by illness or times of stress, and the virus reactivates.

Infection usually starts with a tingling or burning sensation followed a couple of days later by a raised, red blister full of fluid. The whole area is usually painful and tender. The blister will remain for up to two weeks, it will be highly contagious until it dries out and crusts over.

Treatment is most effective when started at the first sign of tingling or burning. Treatment using OTC antiviral creams containing acyclovir and famciclovir can shorten the span of the outbreak. Sunscreen, ibuprofen and paracetamol, cold packs, and aloe vera can help to ease the discomfort and pain associated with a cold sore.

General management of skin infections

Doctors may try to eliminate *Staphylococcus* from people prone to recurring infections by instructing them to wash the entire body

with antibacterial soap and apply antibiotic ointment inside the nose or take oral antibiotics.

With topical antibiotic treatment, signs and symptoms of skin infections begin to improve after approximately 2 to 3 days. Inform the patient that if the skin infection does not improve or gets worse (especially if the patient develops a fever or the infection spreads), the patient should notify the doctor right away. Remind the patient that the length of treatment can differ depending on the type and severity of the infection. Lastly, as is true among all skin infections, keeping the affected area or wound clean with good skin hygiene is very important.

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Antibiotics for topical use				
Active ingredient	Indications	Directions for use	Possible side effects	Comments
Mupirocin e.g. Bactroban, Banogon, Nuban, Supiroban	Topical management of <i>Staphylococcal</i> infections Systemic absorption is minimal	Apply 2–3 times daily for up to 10 days depending on response	Stinging or itching at the site of application Mild burning	Available OTC
Fusidic acid e.g. Fucidin	<i>Staphylococcal</i> infection	Apply 3–4 times daily Maximum 5 days treatment Not for prolonged use	Local hypersensitivity reactions	Available OTC Available as a cream and an ointment
Retapamuline e.g. Altargo	Uncomplicated superficial bacterial skin infections caused by <i>S. pyrogenes</i> and <i>S. aureus</i> , including in primary impetigo	Adults, children and infants ≥ 9 months: apply 2 times daily for up to 5 days	Localised burning, erythema or pain Contact dermatitis	Available OTC
Antivirals for topical use				
Acyclovir e.g. Acitop, Activir	Topical application for mucocutaneous <i>herpes simplex</i> infections (cold sores) Topical application for herpes labialis may be effective provided treatment is commenced at the earliest signs of symptoms	Apply every 4 hours or 5 times daily for no longer than 10 days	Mild pain, burning or stinging when applied to ulcerated lesions Erythema, itch or mild dryness	Available OTC when intended for application to the lip
Penciclovir e.g. Fenivir	Treatment of cold sores	Apply every 2 hours during waking hours for 4 days	Transient burning Numbness Stinging	Available OTC Apply to cold sores of lips and face only