

ANTI-INFECTIVE SKIN PREPARATIONS

The skin is the body's first line of defence against infection. Yet the skin can also become infected itself, especially if the outer layer (epidermis) is damaged by a burn, cut, scrape, insect bite, or an inflammatory skin condition – for example, eczema or dermatitis.

Several different types of organism may infect the skin, including bacteria, viruses, fungi, and yeasts. This page concentrates on drugs applied topically to treat bacterial skin infections. These drugs include antiseptics, antibiotics, and other antibacterial agents. Infection by other organisms is covered elsewhere (see Antiviral drugs, p.91, Antifungal drugs, p.96, and Drugs used to treat skin parasites, p.136).

Why they are used

Bacterial infection of a skin wound can usually be prevented by thorough cleansing of the damaged area and the application of antiseptic creams or lotions as described in the box (right). If infection does occur, the wound usually becomes inflamed and swollen, and pus may form. If you develop these signs, you should see your doctor. The usual treatment for a wound infection is an antibiotic taken orally, although often an antibiotic cream is also prescribed.

An antibiotic or antibacterial skin cream may also be used to prevent infection when your doctor considers this to be a particular risk – for example, in the case of severe burns.

Other skin disorders in which topical antibiotic treatment may be prescribed include impetigo and infected eczema, bedsores, and nappy rash.

Often, a preparation containing two or more antibiotics is used in order to ensure

ANTISEPTICS

Antiseptics (sometimes called germicides or skin disinfectants) are chemicals that kill or prevent the growth of microorganisms. They are weaker than household disinfectants, which are irritating to the skin.

Antiseptic lotions, creams, gels, and solutions may be effective for preventing infection following wounds to the surface of the skin. Solutions can be added to water to

Soaps, shampoos, throat lozenges and mouthwashes, skin lotions, creams, gels, and ointments may contain antiseptic ingredients.



clean wounds (if they are used undiluted, they may cause inflammation and increase the risk of infection). Creams may be applied to wounds after cleansing.

Antiseptics are also included in some soaps and shampoos for the prevention of acne and dandruff, but their benefit in these disorders is doubtful. They are also included in some throat lozenges, but their effectiveness in curing throat infections is unproven.

that all bacteria are eradicated. The antibiotics selected for inclusion in topical preparations are usually drugs that are poorly absorbed through the skin (for example, the aminoglycosides). Thus the drug remains concentrated on the surface and in the skin's upper layers where it is intended to have its effect. However, if the infection is deep under the skin, or is causing fever and malaise, antibiotics may need to be given by mouth or injection.

Risks and special precautions

Any topical antibiotic product can irritate the skin or cause an allergic reaction. Irritation is sometimes provoked by another ingredient of the preparation rather than the active drug, for example, a preservative contained in the product. An allergic reaction causing swelling and reddening of the skin is more likely to be caused by the antibiotic drug itself. Any adverse reaction of this kind should be reported to your doctor, who may substitute another drug, or prescribe a different preparation.

Always follow your doctor's instructions on how long the treatment with antibiotics should be continued. Stopping too soon may cause the infection to flare up again.

Never use a skin preparation that has been prescribed for someone else since it may aggravate your condition. Always throw away any unused medication.

BASES FOR SKIN PREPARATIONS

Drugs that are applied to the skin are usually in a preparation known as a base (or vehicle), such as a cream, lotion, ointment, gel, or paste. Many bases are beneficial on their own.

Creams These have an emollient effect. They are usually composed of an oil-in-water emulsion and are used in the treatment of dry skin disorders, such as psoriasis and dry eczema. They may contain other ingredients, such as camphor or menthol.

Ointments These are usually greasy and are suitable for treating wet (weeping) eczema and very dry chronic lesions.

Gels These are jelly-like in consistency and are often water-based. They are used increasingly for a wide variety of topical skin treatments because they are easy to apply, usually non-greasy, and more rapidly absorbed than ointments.

Collodions These are preparations that, when they are applied to damaged areas of the skin such as ulcers and minor wounds, they dry to

form a protective film. They are sometimes used to keep a dissolved drug in contact with the skin.

Barrier preparations These may be creams or ointments. They protect the skin against water and irritating substances. They may be used in the treatment of nappy rash and to protect the skin around an open sore. They may contain powders and water-repellent substances, such as silicones.

Lotions These thin, semi-liquid preparations are often used to cool and soothe inflamed skin. They are most suitable for use on large, hairy areas. Preparations known as shake lotions contain fine powder that remains on the surface of the skin when the liquid has evaporated. They encourage scabs to form.

Pastes These are ointments containing large amounts of finely powdered solids such as starch or zinc oxide. Pastes protect the skin and absorb unwanted moisture. They are used for skin conditions that affect clearly defined areas, such as psoriasis.

COMMON DRUGS

Antibiotics

Bacitracin
Colistin
Framycetin
Fusidic acid
Gramicidin
Mupirocin
Neomycin
Polymyxin B

Antiseptics and other antibacterials

Cetrimide
Chlorhexidine
Metronidazole *
Oxytetracycline
Povidone iodine
Silver sulfadiazine
Triclosan

* See Part 3