

LULICONAZOLE FOR THE TREATMENT OF FUNGAL INFECTIONS**Manoj Digambar Ingole*, Nitin Namdev Fating and Unnati T. Rathod**

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ABSTRACT

Luliconazole is an imidazole antifungal agent with a unique structure, as the imidazole moiety is incorporated into the ketene dithioacetate structure. Luliconazole is the R-enantiomer, and has more potent antifungal activity than laniconazole. In this review, we summarize the in vitro data, animal studies, and clinical trial data relating to the use of topical luliconazole. Luliconazole is a novel imidazole derivative, which has demonstrated in vitro efficacy against dermatophytes and *Candida albicans*. Preclinical studies have showed the excellent activity of luliconazole against dermatophytes and luliconazole shows the activity against *Candida albicans*. As per the clinical study luliconazole has strong antifungal activity and favourable pharmacokinetic properties in the skin. Clinical trials have

demonstrated its superiority over placebo in dermatophytosis and its antifungal activity is better than terbinafine. A Phase I/II study has shown excellent local tolerability and a lack of systemic side effects with use of topical luliconazole solution for onychomycosis. The Phase III study had shown that luliconazole 1% cream also produced favourable clinical and mycological results in clinical trials for tinea corporis and tinea cruris. Luliconazole 1% cream was approved in Japan in 2005 for the treatment of tinea infections. Luliconazole is approved in the United States as a 1% topical cream for tinea corporis, tinea pedis and tinea cruris caused by *T. rubrum*. Topical luliconazole has a favourable safety profile, with only mild application site reactions reported occasionally. From this review article we conclude Luliconazole has more potent antifungal activity than Laniconazole and Topical luliconazole has a favourable safety profile which shows anti dermatophyte activity and Effective therapy for the management of tinea corporis, tinea pedis and tinea cruris.

KEYWORDS: Luliconazole, dermatophytosis, onychomycosis, clinical trials, review, tinea corporis, tinea pedis, topical luliconazole, antifungal agent, fungal infection.

Fungal Skin Infection

Fungi live everywhere. They can be found in plants, soil, and even on your skin. These microscopic organisms on your skin typically don't cause any problem, unless they multiply faster than normal or penetrate your skin through a cut or lesion.

Since fungi thrive in warm, moist environments, fungal skin infections can often develop in sweaty or damp areas that don't get much airflow. Some examples include the feet, groin, and folds of skin.

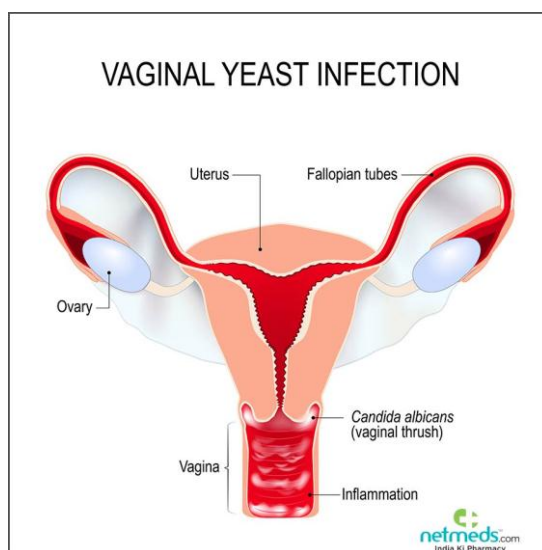
Often, these infections appear as a scaly rash or discoloration of the skin that is often itchy. Some fungal skin infections are very common. Although the infection can be annoying and uncomfortable, it's typically not serious.

Fungal skin infections are often spread through direct contact. This can include coming into contact with fungi on clothing or other items, or on a person or animal.

Most Common Fungal Skin Infections:- many common fungal infections can affect the skin. In addition to the skin, another common area for fungal infections is mucous membranes. Some examples of these are vaginal yeast infections and oral thrush.

Below, we'll explore some of the most common types of fungal infections that can impact the skin.





Antifungal

An antifungal medication is also known as an antimycotic medication used to treat and prevent mycosis. Antifungal are medicine that kill or stop the growth of fungi that cause infection they are also called as antimycotic agent.

Classification of drugs

Anti fungal Antibiotics:

Polyenes: Amphotericin B (Fungizone),
Nystatin (Mycostatin)

Others: Griseofulvin

Azole Derivatives:

a) Imidazoles

Clotrimazole Econazole Fenticonazole, Ketoconazole,
Luliconazole, Miconazole, Omoconazole

b) Triazoles

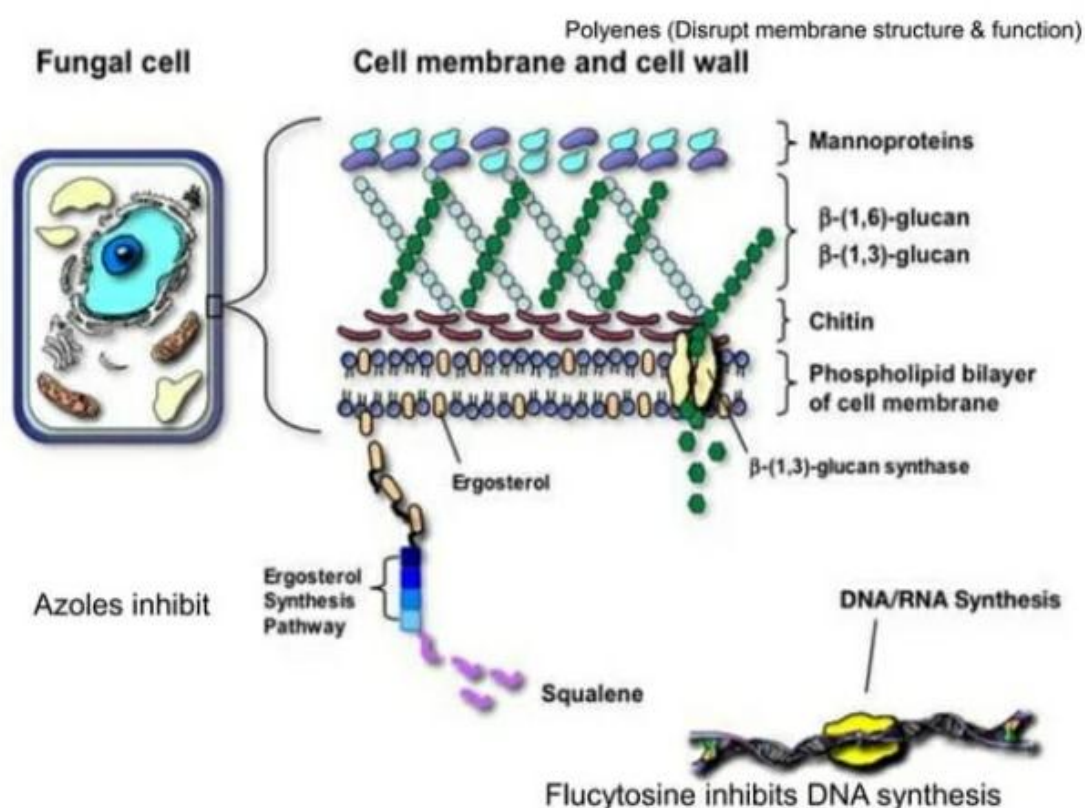
Albaconazole, Efinaconazole, Epoxiconazole,
Fluconazole, Isavuconazole, Itraconazole, Posaconazole,

c) Thiazoles

Abafungin

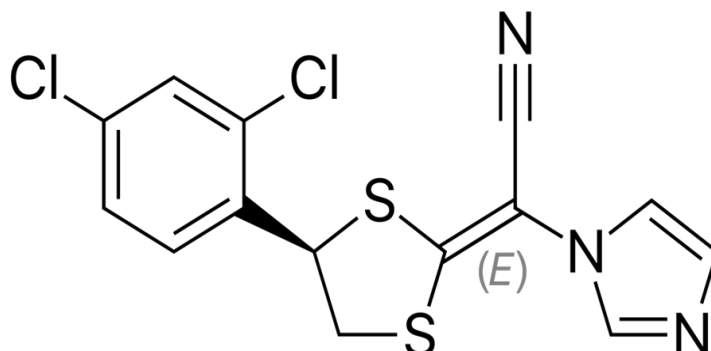
Mechanism of Action Antifungal

- In cell membrane lipid by layer protein synthesis.
- Ergosterol is maintained synthesized by 14 α demethylase enzyme that provide stability of membrane.
- Glucan synthase complex located in cell membrane. Is responsible for synthesis β 1,3 glucan chain.
- Elongation and cross linking of glucan chain important to the toughness of cell wall.
- The azole have broad spectrum antifungal activity they involved ergosterol by inhibiting fungal cytochrome. P450 mediated enzyme 14 α demethylase in inhibition demethylation of lanosterol by accumulation of methyl sterol.
- Lack of ergosterol leads to disruption fungal cell membrane amphotericin-B has high affinity for ergosterol in the cell membrane. several poly molecules get inserted into the fungal cell membrane as aggregate after combining ergosterol to form a acid potassium and other soluble substances move out. Echinocandins inhibits synthesis β 1,3 synthase which is required for cross linking between cell wall.



Luliconazole

Luliconazole is antifungal agent to treatment of fungal. It works by slowing the growth of fungi that cause infection.



IUPAC name (2E)-[(4R)-4-(2,4-Dichlorophenyl)-1,3-dithiolan-2-ylidene](1H-imidazol-1-yl)acetonitrile

Use of Luliconazole

Luliconazole comes as a cream to apply to the skin. To treat jock itch and ringworm, luliconazole is usually applied once a day for 1 week. To treat athlete's foot, luliconazole is usually applied once a day for 2 weeks. Follow the directions on your prescription label carefully, and ask your doctor or pharmacist to explain any part you do not understand. Use luliconazole exactly as directed. Do not use more or less of it or use it more often than prescribed by your doctor.

To use the cream, apply enough cream to cover the affected area and about 1 inch (2.5 cm) of the skin around it. You should wash your hands after applying the medication.

Precautions

Before using luliconazole,

Tell your doctor and pharmacist if you are allergic to luliconazole, any other medications, or any of the ingredients in luliconazole cream. Ask your pharmacist for a list of the ingredients. tell your doctor and pharmacist what prescription and non prescription medications, vitamins, nutritional supplements, and herbal products you are taking.

Tell your doctor if you have or have ever had any medical condition.

Tell your doctor if you are pregnant, plan to become pregnant, or are breastfeeding. If you become pregnant while using luliconazole, call your doctor.

Dietary Instructions

Unless your doctor tells you otherwise, continue your normal diet.

If You Forget a Dose

Apply the missed dose as soon as you remember it. However, if it is almost time for the next dose, skip the missed dose and continue your regular dosing schedule. Do not apply extra cream to make up for a missed one.

Side Effects

Luliconazole may cause side effects. Tell your doctor if any of these symptoms are severe or do not go away irritation, itching, or stinging in the place where you applied the medication. Luliconazole may cause other side effects. Call your doctor if you have any unusual problems while using this medication.

About Storage and Disposal

Keep this medication in the container it came in, tightly closed, and out of reach of children. Store it at room temperature and away from light, excess heat and moisture (not in the bathroom).

Unneeded medications should be disposed of in special ways to ensure that pets, children, and other people cannot consume them. However, you should not flush this medication down the toilet. Instead, the best way to dispose of your medication is through a medicine take-back program. Talk to your pharmacist or contact your local garbage/recycling department to learn about take-back programs in your community.

It is important to keep all medication out of sight and reach of children as many containers (such as weekly pill minders and those for eye drops, creams, patches, and inhalers) are not child-resistant and young children can open them easily. To protect young children from poisoning, always lock safety caps and immediately place the medication in a safe location.

Other Information

Keep all appointments with your doctor.

Do not let anyone else use your medication.

Ask your pharmacist any questions you have about refilling your prescription.

Brand Name

Luzu.

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