



TERBINAFINE

<http://www.aocd.org>

Terbinafine is an allylamine antifungal medication. The medication can be administered orally or topically as a cream. The topical treatment was officially approved by the FDA in 1993 and can be bought over the counter. The oral treatment was approved in 1996 and widely distributes in the central nervous system, hair and nail beds and may remain there for up to three months because of extended elimination from skin and adipose tissue. Terbinafine is metabolized in the liver and 70% is excreted in the urine.

Mechanism: Terbinafine has a fungicidal effect by inhibiting the enzyme squalene monooxygenase which is involved in the synthesis of sterol in fungi. This inhibits fungal sterol biosynthesis by decreasing ergosterol levels. Fungal membranes are not able to grow because ergosterol is one of the main components of the fungal cell membrane. Additionally, squalene accumulates which weakens the cell membrane. Orally, the drug is very effective due to its ability to concentrate within the nails.

Uses: With its unique mechanisms of action, terbinafine has been established as the most effective oral agent for onychomycosis with a cure rate of 50 – 70% and also treats tinea capitis. Topically it can treat tinea pedis. The drug has established good coverage against various dermatophyte strains such as epidermophyton floccosum, malassezia furfur, microsporum canis, microsporum gypseum, microsporum nanum, trichophyton mentagrophytes, trichophyton rubrum and trichophyton verrucosum. However, terbinafine is not very effective against Candida.

Secondary to its mechanism of action, it is useful in the following dermatologic diseases:

- **Tinea pedis**
- **Tinea capitis**
- **Tinea corporis**
- **Tinea cruris**
- **Onychomycosis**
- **Tinea versicolor**

Side Effects: Oral terbinafine is contraindicated in patients with a creatinine clearance of <50. Since terbinafine undergoes hepatic metabolism, the drug is contraindicated in hepatic disease. It is cautioned in patient with system lupus erythematosus (SLE), psoriasis, hepatic disease and immunodeficiency. The most common adverse reactions are nausea, vomiting, pruritus, alopecia, vertigo, headache, pyrexia, diarrhea, dyspepsia, visual changes, upper respiratory infection, cough, constipation, abdominal pain, elevated liver enzymes, taste changes, rash and urticaria. Other serious reactions may include anaphylaxis, hepatotoxicity, hepatic failure, Stevens-Johnson syndrome and **toxic epidermal necrolysis**. There are reports of hematological deficiencies such as thrombocytopenia, neutropenia and agranulocytosis. Terbinafine can also affect the levels of other drugs including pimozide, tricyclic antidepressants, cyclosporine, rifampin and cimetidine. Topical terbinafine has no serious reported reactions but common reactions that occur include pruritus, contact dermatitis, dryness, stinging, burning, irritation and tingling. Baseline liver and renal function should be examined when first administering this drug. Immunodeficient patients receiving the drug for more than six weeks should have a CBC checked. Terbinafine treatment during pregnancy is only recommended if the benefit to the mother outweighs the potential risk to the fetus. It should be avoided in lactation as there is no literature available to assess its safety.

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