Azoles (Ketoconazole)

Azoles are a class of antifungal medication that work by inhibiting fungal ergosterol synthesis, disabling the fungus from growing. They are used for local and less serious systemic mycoses. Common side effects of azole drugs include liver dysfunction and testosterone synthesis inhibition.



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"-azole" suffix
Easels
Drugs in this class are easily recognizable, as they share the "-azole" suffix. Examples include fluconazole and ketoconazole.

Indications

Local and Less Serious Systemic Mycosis
Local Less Serious Levels on Systemic Mic fungus
These medications can be used to treat local and less serious systemic mycoses. Exceptions to this include fluconazole, which can be used for chronic suppression of cryptococcus, along with candidiasis in AIDS patients.

Mechanism

Inhibits Ergosterol Synthesis
Inhibiting-chains on Eggo-stairs
These medications work by inhibiting fungal ergosterol synthesis. This leads to defective cell membrane synthesis in fungi.

Inhibits P450
Inhibiting-chains on Pea-450
Fungal ergosterol (an important component of cell membranes) synthesis is inhibited by inhibiting an important cytochrome P-450 enzyme. This enzyme in the fungus is responsible for converting lanosterol to ergosterol, and inhibition of it leads to defect cell membrane synthesis.

Side Effects

Liver Dysfunction
Broken Liver
These medications can lead to liver damage, and can worsen pre-existing liver disease.

Inhibition of Testosterone Synthesis
Inhibiting-chains on Testes-stereo
Medications like ketoconazole inhibit testosterone synthesis by inhibition of cholesterol desmolase, and can lead to symptoms such as gynecomastia and hormone imbalance.

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