

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.



PLAY PICMONIC

"-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.