Flucytosine

Flucytosine is an antifungal medication used when treating cryptococcal menigitis and candida. It is typically combined with amphotericin B, and works by inhibiting DNA and RNA synthesis. It does so by being converted to 5-FU (5-fluorouracil) by cytosine deaminase in the fungal cell. A common side effect of flucytosine use is bone marrow suppression.

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Indications

Cryptococcus

Crippled-cock

This medication is used to treat serious infections caused by cryptococcus neoformans. Often, it is used to treat cryptococcal meningitis in immunocompromised patients.

Candida

Canada

Flucytosine is used to treat serious infections caused by candida. It can also be used in minor candida infections, such as candidal cystitis.

Used in Combination with Amphotericin B or Azoles

Amphibian-terminator and A-hole

Due to its weak antifungal effects and susceptibility to resistance, flucytosine shoud be used in combination with amphotericin B or azole antifungals.

Mechanism

Inhibits DNA and RNA Synthesis

Inhibiting-chains on DNA and RNA-rhino

Flucytosine works to inhibit and disrupt DNA and RNA biosynthesis in the fungal cell.

Converted to 5-FU by Cytosine Deaminase

Converted to 5-kung-FU by Side-toe (D) Dog-ammo

The way that flucytosine inhibits fungal DNA and RNA synthesis is by being converted to 5-FU, which is an antimetabolite medication. Within the fungal cell, cytosine deaminase converts flucytosine into 5-FU, which blocks the synthesis of thymidine (a building block of DNA).

Side Effects

Bone Marrow Suppression

Bone Arrow Suppressed

Flucytosine leads to antiproliferative actions on bone marrow, leading to suppression. Patients develop anemia, leukopenia, pancytopenia, and even agranulocytosis. This toxicity can be irreversible and can lead to death, notably in immunocompromised patients.