Ethambutol (Myambutol)

Ethambutol is an antibacterial agent used to treat tuberculosis. It works as a bacteriostatic agent, inhibiting RNA synthesis and bacterial replication. It has a large side effect profile, and can lead to optic neuritis and color perception changes, and is also known to cause hyperuricemia, which can lead to gouty attacks.



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Mechanisms

Inhibits RNA Synthesis
Inhibiting-chains on RNA-rhino
This drug works by inhibiting RNA synthesis and decreases tuberculosis replication. It also works by inhibiting bacterial cell wall production, leading to more bacterial cell wall permeability.

Bacteriostatic
Bacteria-shocked
Ethambutol is a bacteriostatic agent, which stops bacteria from reproducing, without otherwise harming the bacteria. Thus, upon removal of this agent, the bacteria start to grow again. Typically, ethambutol is combined with other drugs that are bacteriocidal.

Indications

Tuberculosis (TB)
TB-TV
Ethambutol is used to treat tuberculosis, and is usually given in combination with other drugs. These are known as the “RIPE” drug regimen (rifampin, isoniazide, pyrazinamide, ethambutol).

Side Effects

Optic Neuritis
Optics Nerve-on-fire
Optic neuritis, or inflammation of the optic nerve, is a side effect of this medication and can lead to vision loss and blurring. Because of these visual disturbances, ethambutol is contraindicated in children below the age of six, as they can have permanent damage as their optic nerve is still developing.

Red/Green Color Blindness
Red-and-Green-eyes
Another side effect of this medication is red/green color blindness in adults, along with decreased visual acuity.

Gouty Arthritis
Gout-goat King-Arthur
Patients can develop gouty arthritis when taking ethambutol, complaining of joint pain and swelling in the elbows and toes. This occurs because ethambutol can cause hyperuricemia, which is the cause of gouty attacks.

Consideration

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Monitor Vision Acuity

Monitor and Eye Accuracy

In patients that are taking this medication, it is important to monitor their visual acuity, as visual side effects are very common. With any sudden vision changes, ethambutol therapy should be discontinued.

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