Ethambutol

Ethambutol is a bacteriostatic antimycobacterial drug used in the treatment of tuberculosis. It is often given in combination with isoniazid, rifampin, and pyrazinamide for treatment of active TB. This drug works by blocking bacterial arabinosyltransferase enzyme, which polymerizes carbohydrates in the bacterial cell wall. Disruption of this bacterial enzyme, therefore, leads to increased permeability of the cell wall. This drug can be especially toxic to the eyes, with adverse effects of optic neuritis and red-green color blindness reported.



PLAY PICMONIC

Mechanism of Action

Bacteriostatic
Bacteria-shocked
Bacteriostatic antibiotics limit the growth of bacteria by interfering with bacterial protein production, DNA replication, or other aspects of metabolism without directly harming the organism. Upon removal of the bacteriostatic agent, the bacteria can regrow, as opposed to bactericidal agents that directly kill the organisms.

Blocks Arabinosyltransferase
Blocks Rabbit-nose
This drug works by blocking bacterial arabinosyltransferase enzyme, which polymerizes carbohydrates in the bacterial cell wall.

Arabinosyltransferase Polymerizes Carbohydrates
A-rabbit-nose putting bread-loaves together
This drug works by blocking bacterial arabinosyltransferase enzyme, which polymerizes carbohydrates in the bacterial cell wall.

Carbohydrate Polymers Make Mycobacterium TB Cell Wall
Bread-loaves in TB-TV Cell Wall
Carbohydrate polymers are used in the mycobacterium cell wall. Disruption of bacterial arabinosyltransferase therefore leads to disruption of the cell wall leading to increased permeability.

Side Effects

Red/Green Color Blindness
Red and Green Eyes
Ethambutol can lead to red/green color blindness and decreased visual acuity. Red green color blindness is the inability to distinguish between red and green. The optic neuritis, which results in colorblindness, may also result in central scotoma and decreased visual acuity.

Reversible with Drug Discontinuation
Eyes Reversing
Discontinuation of ethambutol can lead to reversal of the visual disturbances experienced in patients.

Sign up for FREE at picmonic.com