



TUBERCULOSIS ADVERSE DRUG EVENTS

TOXICITY SIDE EFFECTS

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| <ul style="list-style-type: none"> • Serious reactions • May require treatment and/or hospitalization • Requires changes in dose or stopping drug | <ul style="list-style-type: none"> • Unpleasant reactions • Not damaging to health • Do not usually require changes in therapy |
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May be life threatening:
 Hepatitis
 Kidney Failure
 Serious allergic reactions
 Vision changes, eye pain
 Neurological problems
 Thrombocytopenia
 Anemia

Gas
 Bloating
 Discoloration of body fluids
 Sleeping problems
 Photosensitivity
 Irritability

Consultation to healthcare providers at 1-800-TEX-LUNG
 2303 S.E. Military Drive, San Antonio, TX 78223
www.HeartlandNTBC.org

HEPATITIS	NEUROLOGICAL	RENAL	OPHTHALMOLOGIC	HEMATOLOGICAL (rare)
INH	Peripheral Neurotoxicity:	Streptomycin	Vision Changes:	Rifampin Rifabutin
Rifampin	INH	Amikacin	Ethambutol	Ethambutol
PZA	Ethionamide	Capreomycin	Rifabutin	INH
Ethionamide	Linezolid		Linezolid	PZA
PAS	Central Neurotoxicity:	Rifampin	Uveitis:	Linezolid
Levofloxin (rare)	INH	Rifabutin	Rifabutin	Cycloserine (rare)
Ethambutol (rare)	Ethionamide		Orange tears:	Capreomycine (rare)
	Fluroquinolones		Rifampin	Levofloxacin (rare)
	Cycloserine			Moxifloxacin (rare)
	Amikacin			Streptomycin (rare)
	Linezolid			PAS (rare)

ADVERSE DRUG EVENTS - SYMPTOMS

HEMATOLOGICAL (all of these are rare)

Low platelet count which impairs ability to clot and may cause bleeding - **stop** drug. **Rifampin, Rifabutin, rarely INH, Linezolid**, EMB, Ethion, FQN, PAS, PZA, Capreo, Strep.

Low white blood cell count which limits ability to fight infections, especially bacterial infections.

Rifabutin especially in high doses, **INH, Linezolid, Rifampin, PAS, EMB**

Anemia. **Linezolid**, rarely INH, rifampin, Ethion, FQN, PZA, Cycloserine.

HEPATITIS

Early signs: fatigue, rash, poor appetite, nausea, bloating.

Later signs: vomiting, abdominal pain, jaundice, dark urine, light stools, neurological problems.

Laboratory evaluation: liver enzymes (AST/ALT) and bilirubin, clotting studies (evaluate extent of inflammation and liver function). *Medication must be stopped while LFTs done if signs of hepatitis present.*

GENERAL APPROACH

- 1.) Hold TB meds if LFT's > 3x normal and symptomatic.
- 2.) Hold TB meds if LFT's >5 normal even if no symptoms.
- 3.) Hold TB meds if T.bili is increased >2x normal and no other explanation

IMMUNE REACTIONS

Rash: may be mild and medications continued with or without benedryl.

Hives: medication should be stopped and restarted only after desensitization, preferably in hospital.

Swelling of lips: **stop** drug; **do not restart.**

Breathing difficulty or wheezing: **stop** drug; **do not restart.**

Drug fever: patient well except for fever; resolves with stopping drug.

Rifampin reaction: low platelets, renal failure, flu-like symptoms. **Stop** Rifamycins.

Drug induced lupus due to INH, rarely Rifampin. Drugs usually must be stopped.

NEUROLOGICAL TOXICITY

Peripheral neuropathy: tingling, pain and/or numbness of hands or feet. More common in those with diabetes, alcoholics, HIV infected. Usually can be treated with change in dose or addition of Vitamin B6. **INH, Ethionamide, Linezolid, rarely fluoroquinolones, EMB.**

Central neuropathy: headaches, sleep difficulty, loss of concentration, seizures, personality changes, memory loss. **INH, Ethionamide, Cycloserine, Levofloxacin, Linezolid.**

SEROTONIN SYNDROME

Linezolid is a monoamine oxidase inhibitor (MAO) and interacts with other drugs that promote release of serotonin or block its re-uptake. Causes excessive CNS and peripheral serotonergic activity. May be fatal. Manifests as altered mental status, neuromuscular activity and autonomic dysfunction.

OPHTHALMOLOGIC

Visual toxicity: change in color vision. Change in visual acuity. Ethambutol, Rifabutin, Linezolid, Clofazamine

Inflammation of eye (uveitis): pain, redness, blurring of vision. **Rifabutin**

MUSCULOSKELETAL

Athralgias: Common with **PZA, INH, fluoroquinolones, Rifabutin** especially with high dose. Can be due to electrolyte abnormality. May occur with Amikacin, Streptomycin, Capreomycin.

Gout: High uric acid in persons on **PZA** (with kidney disease).

Tendonitis: **stop** exercise. Evaluate risk versus benefit of drug. Consider non-steroidal anti-inflammatory. May need to stop medication. **Fluoroquinolones.**

Tendon rupture: Usually achilles tendon in ankle. **Fluoroquinolones:** **stop** medication; stop exercise.

RENAL

Kidney failure: patient will feel ill and may have decreased urine output or swelling: **Streptomycin, Amikacin, Capreomycin, Rifampin, Rifabutin.**

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Produced by Heartland National TB Center with funds awarded by the Centers for Disease Control and Prevention (CDC).

Adverse effect of treating LTBI serious enough to entail hospital admission or death also should be reported to the CDC through local public health authorities or by calling (404) 639-8401.