

# **Objectives:**

#### First-line Tuberculosis (TB) Medications

- Medication Dosages
- Side Effects
- Nursing Considerations
- Medication Administration Tips











## RIFAMPIN

#### • Bactericidal (kills bacteria)

Highest sterilizing activity against rapidly dividing and semi-dormant bacteria

#### • Dose:

- Adult: 10 mg/kg/dose ( usually 600 mg PO)
- Child: 15-20 mg/kg/dose
- o Infant/Toddler: 20-30 mg/kg/day
- o Renal failure/dialysis: no dose adjustment

#### Rapid absorption

- May be decreased by high-fat meals
- CSF penetration

#### Increases metabolism of many drugs

 Hormonal contraception, methadone, anti-seizure medications, anticoagulants, antiretrovirals

HEART

ND





## RIFAMPIN

#### • Monitoring:

- Liver enzymes AST/ALT if there are symptoms of hepatotoxicity
- Drug concentrations

#### • Drug to drug interactions:

- Certain rifamycins cannot be given with antiretroviral drugs; be sure to consult with an expert
- Ensure patient identifies all other medications they are taking as they may interfere with rifampin

#### • Patient Education:

o Best taken without food, however, can take with a small amount of food for stomach upset











### **ISONIAZID:** Patient Education and Monitoring

#### Patient Education:

- Avoid alcohol
- Do not take antacids within one hour of medication administration
- Some patients may benefit from supplemental Vit B6
- Drug interactions:
  levodopa, phenytoin, valproic acid, carbamazepine

#### Monitor:

· LFTs: baseline and monthly, especially if underlying liver disease exists

HEARTL

ND

• Therapeutic drug monitoring is recommended if you suspect malabsorption or treatment failure



100 Tablets

## PYRAZINAMIDE

#### • Bacteriostatic/sterilizing agent:

 Greatest activity against dormant or semi dormant (slow growing) organisms

#### • Dose

- Adult: 25mg/kg/day
- Children: 30-40 mg/kg/dose
- Renal failure: 25 mg/kg/dose 3 times per week (not daily)
  - Cleared by the kidneys; dose 3 x week after dialysis

#### • Use in pregnancy/breastfeeding:

- In the U.S. PZA is avoided in pregnancy for drug susceptible disease due to lack of data regarding teratogenicity, however
- Should be used for drug-resistant TB when the isolate is susceptible to PZA
- When in doubt, please consult with an expert



15

#### 3S/Glucose **PYRAZINAMIDE** holesterol Friglyceride HDL-C 12.5 LDL-C g/dL Uric acid g/dL Total protein Adverse Reactions: g/dL Albumin · Gout (hyperuricemia) and arthralgias mg/dL Hepatotoxicity Rash Photosensitivity • GI upset Monitor Monitor transaminases and uric acid ANKLE OR FOO • Patient educations: May be taken with or without food • Limit sun exposure • Notify nurse or healthcare worker if they experience severe pain or swelling in joints FINGER

## **ETHAMBUTOL**

- Bacteriostatic (prevents multiplication/growth)
   Bactericidal only at the high end of the dosing range
- Prevention of rifampin resistance:
   Ethambutol protects the emergence of rifmapin resistance when INH resistance may be present
- Dose:
  - Adults: 15-25 mg/kg/day
  - Children: 15-25 mg/kg/day
  - Renal failure: 15-25 mg/kg/dose 3 x weekly (not daily)
- Remember: EMB can be discontinued as soon as the results of drug susceptibility studies demonstrate that the isolate is susceptible to INH and RIF











FLUOR	OQUI	NOL	ONE	S		
Moxifloxacin				Levofloxacin		
Bactericidal			E	Bactericidal		
Metabolized in part by the liver			E	Excreted unchanged by the kidneys;		
Dose: 400 mg/day; no dose adjustment required with renal insufficiency			[ i c	Dose: 750-1000 mg/day; adjust dose in renal insufficiency (750-1000 mg/dose 3 times weekly for creatinine clearance < 30 mL/min).		
Side	Abdominal discomfort	Diarrhea	Nausea/ vomiting	Mouth sores	Headache	Dizziness
Effects	Skin itching	QT prolongation	Blurred visi	on <b>Nervousness</b>	Anxiety	Agitation









- All TB medications have side effects
- Baseline and monthly assessments for visual acuity and color discrimination aid in preventing toxicities
- When changes from baseline occur
  - Hold medications and reassess the patient to find likely cause
- Be creative when medication administration becomes a challenge



\*Take home message