TRIENTINE HYDROCHLORIDE

**THERAPEUTICS**

**Brands**
- Syprine

**Generic?**
- Yes

**Class**
- Chelating agent

**Commonly Prescribed for** *(FDA approved in bold)*
- Wilson’s disease (WD) in patients intolerant of penicillamine

**How the Drug Works**
- In WD copper accumulates in body tissues (especially the liver and CNS), causing neurological/psychiatric problems and/or liver failure. Trientine binds to (chelates) copper, allowing it to be excreted in the urine

**How Long Until It Works**
- 6 months or more

**If It Works**
- Continue treatment, if tolerated. Most patients remain on drug for the rest of their life but if serum copper returns to normal (< 10 mcg/dL) consider changing to elemental zinc or zinc sulfate. Monitor for recurrence of symptoms or changes in urinary copper excretion

**If It Doesn’t Work**
- Increase to as much as 2000 mg daily for poor clinical response or if free serum copper is above 20 mcg/dL. For liver failure or truly refractory patients, liver transplantation is curative

**Best Augmenting Combos for Partial Response or Treatment-Resistance**
- Change to penicillamine if ineffective. A diet low in copper-containing foods, such as nuts, chocolate, liver, and dried fruit, is recommended

**Tests**
- Adequately treated patients should have free serum copper below 10 mcg/dL. Monitor

**24-hour urinary copper excretion every 6–12 months (should be between 0.5–1 mg)**

**ADVERSE EFFECTS (AEs)**

**How Drug Causes AEs**
- Unknown

**Notable AEs**
- Heartburn, iron deficiency anemia, anorexia, cramps, muscle pain, and epigastric pain have been reported. Rarely muscle spasm or dystonia have occurred. The relationship of these symptoms to trientine is unclear

**Life-Threatening or Dangerous AEs**
- Myasthenia gravis and systemic lupus erythematosus have been reported

**Weight Gain**
- Unusual

**Sedation**
- Unusual

**What to Do About AEs**
- Discontinue only for serious AEs

**Best Augmenting Agents for AEs**
- Most cannot be improved with the use of an augmenting agent

**DOSING AND USE**

**Usual Dosage Range**
- 1000 mg – 2000 mg/day

**Dosage Forms**
- Tablets: 250 mg

**How to Dose**
- Start at 750 – 1250 mg/day in 2–4 divided doses. Increase to as much as 2 g daily in divided doses as needed
Dosing Tips
- Give at least 1 hour before or 2 hours after meals to ensure absorption

Overdose
- Symptoms unknown

Long-Term Use
- Safe for long-term use

Habit Forming
- No

How to Stop
- No need to taper

Pharmacokinetics
- Not available

Drug Interactions
- Mineral supplements block the absorption of trientine. Do not give within 2 hours of iron supplements

Other Warnings/Precautions
- Capsule contents can cause contact dermatitis

Do Not Use
- Known hypersensitivity

Children and Adolescents
- WD can occur in children, usually ages 5 or older. In children 12 or younger, start at 500–750 mg/day in 2–4 divided doses. Increase to maximum of 1500 mg/day. Dose children over 12 as adults

Pregnancy
- Category C. Use only if needed

Breast Feeding
- Unknown if excreted in breast milk

THE ART OF NEUROPHARMACOLOGY

Potential Advantages
- Compared to penicillamine, fewer AEs and easier to dose. Small head-to-head studies show effectiveness is similar

Potential Disadvantages
- Penicillamine has been used for a longer period of time with more evidence of effectiveness

Primary Target Symptoms
- Monitor serum and urinary copper to determine effectiveness. Treatment should improve neurological symptoms, including parkinsonism, dystonia, ataxia, depression, and psychosis

Pearls
- The high incidence of paradoxical worsening and multiple AEs seen with penicillamine have led many to suggest that trientine should be the first-line agent in WD
- Not indicated for rheumatoid arthritis or cystinuria
- Other agents with known effects in WD include tetrathiomolybdate and intramuscular dimercaprol
- In asymptomatic individuals diagnosed by abnormal test results or family screening, it is uncertain if zinc, trientine or penicillamine is most appropriate initial treatment

SPECIAL POPULATIONS

Renal Impairment
- Use with caution

Hepatic Impairment
- Usually improves hepatic disease in WD, even if severe

Cardiac Impairment
- No known effects

Elderly
- Use with caution
Suggested Reading


