**Cycloserine (Cs) [and Terizidone (Trd)]**

**DRUG CLASS: ANALOG OF D-ALANINE.**

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<th>Activity against TB, mechanism of action, and metabolism</th>
<th>Bacteriostatic; inhibits cell wall synthesis.</th>
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**Dose**

- **Adults:** 10–15 mg/kg/day usually (max. 1000 mg/day); Usually 500–750 mg/day given in two divided doses or once a day if tolerated. Some patients may require only alternate day 250 mg and 500 mg dosing to avoid toxicity.
- **Children:** 10–20 mg/kg/day divided every 12 hours (daily maximum 1 gram).

**Pyridoxine (vitamin B6):** Although supporting data are not extensive, MDR-TB experts recommend that all patients should receive vitamin B6 while taking cycloserine. Adults need 100 mg or more (or 50 mg per 250 mg of cycloserine) and children should receive a dose proportionate to their weight (1–2 mg/kg/day, with a usual range of 10–50 mg/day).

**Renal failure/dialysis:** 250 mg once daily or 500 mg, 3 times per week; monitor drug concentrations to keep peak concentrations <35 mcg/ml.

**Route of administration** Oral; not available parenterally.

**Preparation** 250 mg capsule.

**Storage** Room temperature (15–25 °C) in airtight containers.

**Oral absorption** Modestly decreased by food (best to take on an empty stomach); not significantly affected by antacids or orange juice.

**CSF penetration** Concentrations approach those in serum.

**Special circumstances**

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<th>Use in pregnancy/breastfeeding:</th>
<th>Not well studied, but no teratogenicity documented. Use if there are no better choices. Can be used while breastfeeding (dose the infant with vitamin B6 if breastfed).</th>
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<tr>
<td>Use in renal disease:</td>
<td>Cycloserine is cleared by the kidney and requires dose adjustment for renal failure (see above). Use with caution.</td>
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<td>Use in hepatic disease:</td>
<td>Not associated with hepatotoxicity.</td>
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**Adverse reactions** CNS toxicity, including inability to concentrate and lethargy. More serious CNS side effects, including seizure, depression, psychosis and suicidal ideation, usually occur at peak concentrations >35 mcg/ml, but may be seen in the normal therapeutic range. Other side effects include peripheral neuropathy and skin changes. Skin problems include lichenoid eruptions and Stevens-Johnson syndrome.

**Contraindications** Relative contraindications include seizure disorder, psychotic disease or alcohol abuse.
**Monitoring**

Peak concentrations should be obtained within the first 1–2 weeks of therapy and monitored serially during therapy. The peak concentration should be kept below 35 mcg/ml. Baseline and monthly monitoring for depression using a tool such as the Beck Depression Index should be done.

**Patient instructions and alerting symptoms**

If food is taken, avoid a large fatty meal. Avoid alcohol. You must also take a high-dose vitamin B6 supplement while on this drug.

**Instruct patients to inform their health care provider right away if any of the following occurs:**

- Seizures
- Shakiness or trouble talking
- Depression or thoughts of hurting yourself
- Anxiety, confusion or loss of memory
- Personality changes, such as aggressive behavior
- Rash or hives
- Headache.