**Tetrabenazine (te-tra-ben-a-zeen)**

**Sensine**

**Classification**
Therapeutic: antichoreas
Pharmacologic: reversible monoamine depleters
Pregnancy Category C

**Indications**
Treatment of chorea due to Huntington’s Disease.

**Action**
Acts as a reversible inhibitor of the vesicle monoamine transporter type 2 (VMAT-2), which inhibits the reuptake of serotonin, norepinephrine and dopamine into vesicles in presynaptic neurons.

**Therapeutic Effects:** Decreased chorea due to Huntington’s Disease.

**Pharmacokinetics**
Absorption: At least 75% absorbed following oral administration.
Distribution: Crosses the blood-brain barrier.
Metabolism and Excretion: Rapidly and extensively metabolized by the liver; CYP2D6 plays a large role in the metabolic process (the CYP2D6 enzyme system exhibits genetic polymorphism; 7% of population may be poor metabolizers and may have significantly lower concentrations and an increased risk of adverse effects). Metabolites are renally excreted. Two metabolites-president and xenazine—bind to VMAT-2 and are pharmacologically active.
Half-life: **HTBZ** - 4-8 hrs; **xenazine** - 2-4 hr.

**TIME/ACTION PROFILE (blood levels)**

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO</td>
<td>unknown</td>
<td>1.0–1.5 hr</td>
<td>12–18 hr*</td>
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*Return of symptoms following discontinuation.

**Contraindications/Precautions**
Contraindicated in: Hepatic impairment; Concurrent use of reserpine or MAO inhibitors; Patients who are actively suicidal or have untreated depression; Lactation: Lactation.

Use Cautiously in: History of/propensity for depression or history of psychotic illness, history of suicide; Poor CYP2D6 metabolizers; initial dose reduction required. Concurrent use of CYP2D6 inhibitors; dose modification required. Recent history of myocardial infarction or unstable heart disease; Use only when potential benefit outweighs potential risks to the fetus; OB: Use only when potential benefit outweighs potential risks to the fetus; Pedi: Safety and effectiveness not established.

**Adverse Reactions/Side Effects**
CNS: anxiety, fatigue, insomnia, depression, sedation/somnolence, cognitive deficits, dizziness, headache.
Resp: shortness of breath.
CV: hypotension, QTc interval prolongation.
GI: nausea, dysphagia.
Neuro: akathisia, balance difficulty, dystonia, parkinsonism, unsteady gait.
Misc: NEUROLEPTIC MALIGNANT SYNDROME.

**Drug-Drug:**
Blood levels are increased by drugs that inhibit the CYP2D6 enzyme system including fluoxetine, paroxetine, and quinidine; initial dose of tetrabenazine recommended. Reserpine binds to VMAT-2 and depletes monoamines in the CNS; avoid concurrent use. Wait 3 wk after discontinuing to initiate tetrabenazine. Concurrent use of MAO inhibitors risk of serious adverse reactions and is contraindicated. Concurrent use with neuroleptic drugs or dopamine antagonists including haloperidol, chlorpromazine, risperidone, and olanzapine may risk of QTc interval prolongation, hypotension, extrapyramidal and neuroleptic malignant disorders.

**Route/Dosage**

**PO (Adults):**
- 12.5 mg/day for one wk initially, then by 12.5 mg weekly up to 37.5–50 mg/day in 3 divided doses; Concurrent use of strong inhibitors of CYP2D6 or poor CYP2D6 metabolizers—start with initial dose of 6.25 mg, titrate carefully.

**NURSING IMPLICATIONS**

**Assessment**
- Assess signs of Huntington’s disease: changes in mood, cognition, chorea, rigidity, and functional capacity periodically during therapy. Re-evaluate need for tetrabenazine periodically by assessing beneficial effect and side effects; determination may require dose reduction or discontinuation.
- Measure blood pressure and heart rate periodically during therapy (eg, at wk 1, 2, 4, 6, 8, and every 2 months thereafter). Evaluate effectiveness of therapy by observing decrease in chorea.
- Monitor closely for new or worsening depression or suicidality. If depression or suicidality occurs, discontinue or adjust dose of antidepressant.

**NURSE-PATIENT INTERACTION**
- Monitor for side effects and discuss with prescriber.
- Review and discuss the patient’s action plan for how to maintain good health and manage symptoms.
- Evaluate the patient’s understanding of the treatment plan and any questions the patient may have.
- Encourage the patient to continue taking the medication as prescribed despite possible side effects.
- Discuss the importance of adhering to the treatment plan and follow-up appointments.

**Patient Education**
- Instruct the patient to take the medication as prescribed and to notify the prescriber immediately if any adverse reactions occur.
- Advise the patient to avoid alcohol and other CNS depressants while taking the medication.
- Inform the patient that the medication may cause drowsiness and to avoid driving or other activities requiring alertness.
- Caution the patient to avoid concurrent use of MAO inhibitors and neuroleptic drugs.
- Instruct the patient to report any changes in mood or behavior, especially if new or worsening depression or suicidality occurs.

**Revised 2/17/2014**
Monitor for signs of neuroleptic malignant syndrome (hyperpyrexia, muscle rigidity, altered mental status, irregular pulse or BP, tachycardia, diaphoresis, cardiac dysrhythmia) periodically during therapy. If symptoms occur discontinue tetrabenazine and manage symptomatically. If re-introduction of tetrabenazine is considered monitor carefully; recurrences of neuroleptic malignant syndrome have occurred.

Monitor patient for onset of akathisia (restlessness or desire to keep moving) and parkinsonian (difficulty speaking or swallowing, loss of balance control, pill rolling of hands, mask-like face, shuffling gait, rigidity, tremors). Notify health care professional if these symptoms occur; reduction in dose or discontinuation may be necessary.

Assess BP sitting and standing. May cause orthostatic hypotension.

Lab Test Considerations:
Test for the CYP2D6 gene in patients requiring doses of 50 mg/day to determine if they are poor, intermediate, or extensive metabolizers. Limit dose to 50 mg in patients who are poor metabolizers.

Potential Nursing Diagnoses
Risk for suicide (Adverse Reactions)

Implementation
Dose should be titrated slowly and individualized.
PO:
May be administered without regard to food.

Patient/Family Teaching
Instruct patient to take tetrabenazine as directed. Do not take more or stop taking tetrabenazine without consulting health care professional. Dose adjustment may take several wk. Due to procedure for missed doses with health care professional before beginning therapy, do not double dose. If a dose is missed or medication discontinued, involuntary movements will return or worsen in 12–18 hrs. If tetrabenazine is stopped for more than 5 days, consult health care professional before taking another dose; lower dose may be required.

Advise patient and family to monitor for changes, especially suicidal changes, in mood, behavior, thoughts or feelings. If new or worse feelings of sadness or crying spells, lack of interest in friends or activities, sleeping a lot more or less, feelings of emptiness, guilt, hopelessness or helplessness, irritability or aggression, more or less hunger, difficulty paying attention, or thoughts of harming self or ending life occur, notify health care professional promptly.

Causes sedation. Caution patient to avoid driving and other activities requiring alertness until response to medication is known.

Advise patient to avoid alcohol and other CNS depressants during therapy. 

Inform patient of potential side effects and instruct to notify health care professional if side effects occur.

Advise patient to notify health care professional of all Rx or OTC medications, vitamins, or herbal products being taken and consult health care professional before taking any new medications.

Advise female patients to notify health care professional of pregnancy to planned or suspected if breast feeding.

Evaluation/Desired Outcomes
1. Improvement in chorea due to Huntington's disease.

Why was this drug prescribed for your patient?