**VIGABATRIN**

### THERAPEUTICS

**Brands**
- Sabril

**Generic?**
No

**Class**
- Antiepileptic drug (AED)

**Commonly Prescribed for**
(FDA approved in bold)
- Infantile spasms in children (ages 1 month-2 years)
- Adjunctive for treatment-resistant epilepsy
- Complex partial seizures
- Cocaine or methamphetamine dependence

**How the Drug Works**
- Inhibits catabolism of GABA by inhibiting gamma-aminobutyric acid transaminase (GABA-T). This increases synaptic levels of GABA. Does not act directly on GABA receptors. May decrease levels of excitatory neurotransmitters (glutamate, aspartate, glutamine) in the brain

**How Long Until It Works**
- Seizures – by 2 weeks

**If It Works**
- Seizures – goal is the remission of seizures. Continue as long as effective and well-tolerated

**If It Doesn’t Work**
- Increase to highest tolerated dose
- Epilepsy: consider changing to another agent, adding a second agent or referral for epilepsy surgery evaluation

### ADVERSE EFFECTS (AEs)

**How Drug Causes AEs**
- CNS AEs are probably caused by changes in GABA levels

**Notable AEs**
- Somnolence, fatigue, weight gain, headache, dizziness, anxiety, depression, ataxia, hyperactivity (children), psychosis (adults)

**Life-Threatening or Dangerous AEs**
- Retinal atrophy and visual field defects in about 1/3 of patients, peaking at 1 year but occurring as soon as a few weeks. Visual field loss may be irreversible

**Weight Gain**
- Not unusual

**Sedation**
- Not unusual

**What to Do About AEs**
- Decrease dose
- Vision loss may require stopping drug

**Best Augmenting Agents for AEs**
- Most AEs cannot be improved by an augmenting agent

### DOSING AND USE

**Usual Dosage Range**
- Epilepsy: 2–4 g/day

**Dosage Forms**
- Tablets: 500 mg

**How to Dose**
- In adults, start at 1 or 2 g/day. Increase or decrease by 500 mg depending on clinical response and tolerability. Usual most effective dose is 2–4 g/day in once- or twice-daily doses
Dosing Tips
- Food slows rate but not extent of absorption

Overdose
- Vertigo and tremor have been reported

Long-Term Use
- Safe

Habit Forming
- No

How to Stop
- Taper slowly over 2 weeks or more
- Abrupt withdrawal can lead to seizures in patients with epilepsy

Pharmacokinetics
- Most drug is excreted unchanged in urine. No hepatic metabolism. Bioavailability is 80–90%. Peak levels at 2 hours. Half-life is 5–8 hours in young adults but 12–13 hours in the elderly

Drug Interactions
- Vigabatrin lowers phenytoin levels by 20% but there are no other significant interactions with other AEDs

Do Not Use
- Patients with a proven allergy to vigabatrin

Children and Adolescents
- Start at 40 mg/kg/day. Increase to 80–100 mg/kg/day depending on clinical response. Alternatively, start at 500 mg and increase by 500 mg per week to optimal dose. Children over 50 kg will use the adult dose

Pregnancy
- Risk category C. Use only if risks of stopping drug outweigh potential risk to fetus
- Supplementation with 0.4 mg of folic acid before and during pregnancy is recommended

Breast Feeding
- Generally recommendations are to discontinue drug or bottle feed
- Monitor infant for sedation, poor feeding or irritability

THE ART OF NEUROPHARMACOLOGY

Potential Advantages
- Effective in infantile spasm and low drug interactions

Potential Disadvantages
- Vision loss. May not be effective for many types of epilepsy

Primary Target Symptoms
- Seizure frequency and severity

Pearls
- Usually used in combination with other AEDs in refractory epilepsy
- The effect of the drug is related to the resynthesis of GABA-T enzyme molecules rather than vigabatrin plasma levels
- Patients with symptomatic infantile spasms, i.e., related to tuberous sclerosis, may improve more rapidly. Infantile spasms usually remit by age 5, but are often replaced by other types of seizures
- Visual field deficits can be monitored by formal visual field testing. Consider checking electroretinography for monitoring vision loss in infants and children that cannot perform perimetry

SPECIAL POPULATIONS

Renal Impairment
- May require lowering of dose if creatinine clearance is less than 60 mL/min

Hepatic Impairment
- No known effects

Cardiac Impairment
- No known effects

Elderly
- May need lower dose
**Suggested Reading**


