



Medications for Cyclic Vomiting Syndrome

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What is Cyclic Vomiting Syndrome (CVS)

CVS is a chronic disease marked by severe, recurrent episodes of nausea and vomiting in a person who is otherwise healthy. CVS episodes often flip-flop with states of wellness. Vomiting may occur every 5-10 minutes for several hours during an episode. On average, CVS episodes last 3-7 days but vary with each person. An episode may be accompanied by stomach pain, tiredness, sensitivity to light, and/or headaches. Episodes may begin at any time of the day but often start in the middle of the night or early morning hours. They may be triggered by positive 'stress' (vacations) or negative stress (job loss).

Many patients have a long history of symptoms and frequent emergency department (ED) visits and hospitalizations. A clear diagnosis may have been difficult to obtain which can be frustrating! Therefore, we are providing you with information to help you better understand the disease, best manage your symptoms and improve overall well-being.

What are some medications used in CVS?

Management is individualized and changes in medications and dose adjustments may be needed over the course of your illness. Medications commonly prescribed to prevent CVS episodes are called **preventive or prophylactic medications**. Some of them are listed below and should be taken every day unless instructed otherwise by your healthcare provider.

Preventive Medications

Mitochondrial supplements: L-carnitine, Co-enzyme Q10, and Riboflavin (Vitamin B2)

These supplements have been found to be effective in reducing the frequency and severity of CVS episodes in small studies. They may help your body produce energy,

which is important when you have an episode.

Amitriptyline (Elavil®) and Nortriptyline (Pamelor®)

These medications belong to a class of medications known as tricyclic antidepressants or TCAs. These medications have been shown to decrease the number and severity of CVS episodes as well as decrease pain (They also may help with migraine headaches). You will need EKGs (a safe and painless test that records the electrical impulses of your heart) before you start taking these medications and throughout your treatment because this medication has the potential to change your heart waves. Other side effects include weight gain, dryness of mouth, and constipation. Nortriptyline (Pamelor) may have fewer side effects, but amitriptyline (Elavil®) is generally tried first, as this has been shown to work in studies, and there are more data to support its use. Amitriptyline is generally used at a dose of 75-100 mg based on your response to the medication and how you tolerate it. It has been shown to be effective in 65-85% of patients. Nortriptyline is generally used at a dose of 75-100 mg, like amitriptyline.

Topiramate (Topamax®)

This medication is mostly used in patients with moderate to severe CVS. This is traditionally used as an anti-seizure medication; however, it has also been found to reduce the frequency and severity of CVS episodes and is also used in migraine headaches. Side effects may include cognitive dysfunction, tingling or numbing sensation on the skin, headache, fatigue, dizziness, or mood problems. This medication may interfere with the efficacy of oral contraceptives.

Zonisamide or levetiracetam

These medications can be used in patients who do not respond or are unable to tolerate amitriptyline. Zonisamide is an anti-epileptic (AED), but studies show that it also works in CVS. The starting dose of

zonisamide is 100 mg daily is typical, but your doctor may increase the dose up to 400 mg/day if needed. Levetiracetam is typically started at 500 mg twice daily and may be increased by your doctor until the target dose of ~1000–2000 mg is achieved. Generic formulations are not particularly expensive. Side effects commonly reported include fatigue, confusion, impaired concentration, or headache. These can be managed by switching to the alternative AED. Patients can switch from zonisamide to levetiracetam and vice versa.

Abortive medications (Medications commonly used when an episode is coming on)

Sumatriptan (Imitrex®) nasal spray or Zolmitriptan (Zomig®)

CVS and migraine headaches are thought to be linked, because of this the use of anti-migraine medications may be useful in stopping a CVS episode. It is most effective when used at the *first* sign of symptoms. A nasal preparation may be more effective than a tablet as you may just vomit the pill. Side effects may include tingling, numbness, dizziness, nausea, and drowsiness. These medications should not be given to those with underlying coronary artery disease, peripheral vascular disease, hypertension, or stroke.

Ondansetron (Zofran®)

This is an anti-vomiting medication used at the beginning of your symptoms. It can help control your nausea and vomiting. Generally, it is prescribed as a tablet that dissolves under your tongue. You will need an EKG before beginning this medication as this medication has the potential to cause changes in your heart rhythm. Side effects, while uncommon, may include headache, dizziness, drowsiness, diarrhea, constipation.

Diphenhydramine (Benadryl®)

This medication makes you sleepy and this can help stop the cycle of vomiting. Alcohol, sedatives, and tranquilizers may increase drowsiness and should be avoided when taking this medication. This medication may impair the mental and/or physical abilities required for the performance of potentially hazardous tasks, such as driving a vehicle or operating machinery.

Promethazine (Phenergan®)

This is an anti-vomiting medication that may help stop your nausea and vomiting. This medication may impair the mental and/or physical abilities required for the performance of potentially hazardous tasks, such as driving a vehicle or operating machinery. The impairment may be amplified if used with other central-nervous-system depressants such as alcohol, sedatives/hypnotics (including barbiturates), narcotics, narcotic analgesics, general anesthetics, tricyclic antidepressants, and tranquilizers. Side effects may include drowsiness, blurred vision, dizziness, confusion, disorientation.

Prochlorperazine (Compazine®)

This medication helps decrease severe nausea and vomiting by altering chemicals in your brain that may be causing your symptoms. This medication can be prescribed as a tablet, time released capsule, as an injection, suppository or through an IV. Your physician will work with you to find the correct dose for you but should start with the lowest recommended dosage. You should communicate with them about how it is working to ensure you receive the correct dosage. Side effects may include drowsiness, dizziness, amenorrhea, blurred vision, skin reactions and low blood pressure.

Aprepitant (Emend®)

This is a newer anti-nausea and vomiting medication that has been shown to be helpful in patients with nausea/vomiting due to chemotherapy. (It is *not* a cancer medication.) This medication is used when all others have failed and has been useful in patients with moderate to severe CVS. It is generally very well tolerated; however, it may reduce the efficacy of oral contraceptives in some patients. This is an *expensive medication*, and your doctor will need to do a *prior authorization*. This medication will come in a kit containing three tablets to be taken one a day for three consecutive days. Your healthcare provider may have you repeat this course of treatment once weekly as needed. Side effects may include hiccups, fatigue, increased appetite, mild headache, constipation. This medication is also used as a **preventive** medication.

Lorazepam (Ativan®)

This medication helps relax you, which may make you sleepy and help stop your nausea and vomiting. This medication is *not* meant to be used daily as it is habit forming. Side effects may include respiratory depression (slow and ineffective breathing), sedation, dizziness, weakness, and unsteadiness.

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