Valproic Acid (Depakote)

Valproic acid (Depakote), or valproate, is an anticonvulsant that potentiates the effects of GABA and inhibits sodium channel activity. This inhibition lessens neuronal excitability and decreases seizure activity. Valproic acid is indicated for the majority of seizure types, bipolar disorder, and migraine prophylaxis. Side effects may include GI distress, weight gain, blood dyscrasias, tremors, and rash. Inform the patient to monitor for symptoms of potentially-fatal hepatotoxicity and pancreatitis. Because it is very teratogenic, it is contraindicated in pregnancy.



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Mechanism

Blocks Na+ Channels
Block-guy blocking Salt-shaker Channel
Valproic acid binds to sodium channels and prolongs inactivation of neuronal activity. This inhibition decreases the number of seizures associated with high frequency of neuronal discharge.

Increases GABA Concentration
Up-arrow GABA-goose
Valproic acid increases the effect of GABA in the brain. As an inhibitory neurotransmitter, GABA decreases neuronal excitability and lessens seizure activity.

Indications

Tonic-clonic Seizures
Tonic-clown Caesar
Valproic acid decreases seizure activity by prolonging the inactivated state of sodium channels. This medication is considered a first-line drug for tonic-clonic seizures (See Picmonic for Types of Seizure).

Bipolar Disorder
Bi-polar-bear
Patients diagnosed with bipolar disorder experience alternating episodes of mania and depression. Administering valproic acid may stabilize the mood in bipolar patients by relieving symptoms during manic and depressive episodes. Long-term drug therapy may prevent future episodes.

Migraine Prophylaxis
Mind-rain with Purple-axes
Migraines may be caused by excessive levels of GABA. By potentiating the inhibitory effects of GABA, valproic acid is used for migraine prophylaxis.

Side Effects

Hepatotoxicity
Liver with Toxic-green-glow
Valproic acid may cause hepatotoxicity and liver failure. Do not administer this medication to children under 2 years old or to patients with a history of liver dysfunction. The patient's liver function should be assessed periodically after initiating therapy. Instruct the patient to contact their physician if experiencing symptoms such as anorexia, fatigue, nausea, abdominal pain, or jaundice.

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Blood Dyscrasias

Blood-cell Disc-razor

Valproic acid may cause blood dyscrasias such as anemia, leukopenia, and thrombocytopenia. Assess the patient's RBC, WBC, and platelet counts before and periodically after therapy. A decreased number of platelets may cause prolong bleeding time. Minimize these effects by administering the lowest effective dosage of valproic acid.

GI Distress

GI with Flare-gun

Since valproic acid is absorbed in the GI tract, GI distress is a common side effect of valproic acid. Symptoms such as nausea, vomiting, and indigestion may be prevented by administering an enteric-coated form of valproic acid with food. Since weight gain is a common side effect, advise the patient to exercise and consume a reduced-calorie diet.

Tremor

Trimmer

This drug may cause tremors during its peak effect. Anxiety or stimulants may worsen tremors. Patients who develop a rash may be allergic to this drug and should contact their physician immediately.

Pancreatitis

Pancreas-on-fire

Valproic acid may cause pancreatitis that can result in hemorrhage and death. Instruct the patient to contact their healthcare provider, if experiencing symptoms of abdominal pain, nausea, vomiting, or anorexia (Refer to the Picmonic of Acute Pancreatitis Assessment). The medication should be discontinued and substituted with an alternative drug.

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