

Vitamin K1 (Phytonadione, Mephyton®)

Drs. Foster & Smith Educational Staff

Generic Name

Phytonadione Vitamin K₁

Brand Names

Veta-K₁, Veda-K₁, Mephyton, Aqua-Mephyton

Type of Drug

Vitamin and antidote for anticoagulation poisoning (rat/mouse poison)

Form and Storage

Tablet, capsule, and injectable

Store at room temperature in light resistant tightly closed container.

Indications for Use

Treatment of anticoagulant rodenticide poisoning (rat/mouse poison).

General Information

FDA approved for use in veterinary medicine. Available by prescription. Vitamin K₁ is needed for the body to make certain blood clotting factors in the liver.

Poisoning with rat/mouse poisons or similar products causes the animal to bleed to death, as the body is unable to use its Vitamin K₁ and essentially is deficient in it.

By giving supplemental Vitamin K₁, the body does not become deficient, and severe bleeding does not occur. If the body is deficient in Vitamin K₁ and supplemental Vitamin K₁ is given, it may take 6-12 hours for new clotting factors to be made by the body, and in the meantime, the pet may need blood products (blood transfusion) to live. Two types of rodenticides are on the market. One type lasts for days to weeks, and the other lasts up to a month. Anticoagulant rodenticides taste good to both children and pets, so extreme care must be taken to keep children or pets away from such a product, as they will eat it.

Usual Dose and Administration

Dose depends on type of poison pet ingested. The first (loading) dose is usually 1.15 to 2.25 mg/pound given by injection subcutaneously (SQ) divided between several sites. Then, an oral amount of up to 2.5 mg/pound daily *divided* into 2-3 doses a day is given for 2-4 weeks. Monitor coagulation profile during treatment and after treatment. Restrict animal's activity until 1 week after treatment is completed.

Side Effects

Do not use intravenously (IV) as death has resulted. Intramuscular (IM) injections may cause bleeding especially in the early stages of treatment. Subcutaneous (SQ) and oral doses may be poorly absorbed in dehydrated patients. Pain, tenderness, and swelling may occur at injection sites.

Contraindications/Warnings

Do not give to patients who are hypersensitive (allergic) to it.

Not for use in pregnant or nursing animals.

Does not correct bleeding disorders resulting from heparin administration or liver damage.

Keep the pet quiet during and for a week after treatment.

Monitor for signs of bruising and bleeding. Vitamin K₃ is not effective. Need to use Vitamin K₁.

Not treating a pet poisoned with anticoagulant rodenticides will likely result in the animal's death. Treatment needs to begin immediately.

Contact your veterinarian if you think your pet may have ingested (eaten) rat/mouse poison.

Drug and Food Interactions

The following may decrease the action of Vitamin K₁ and increase the action of the anticoagulant poison: phenylbutazone, aspirin, chloramphenicol, sulfonamides, diazoxide, allopurinol, cimetidine, metronidazole, Anabolic steroids, erythromycin, ketoconazole, propranolol, and thyroid drugs.

Mineral oil may reduce the absorption of oral Vitamin K₁.

Effect of coumarin is decreased.

Overdose/Toxicity

Unlikely to see an acute overdose.

Summary

Vitamin K1 is used to treat poisonings with certain rat and mouse poisons.

Vitamin K1 is first given by injection, then orally for 2-4 weeks. Vitamin K3 is NOT effective against these poisonings. Success of therapy is evaluated by blood tests to assess blood clotting ability.