Vitamin K

AquaMEPHYTON + Phytonadione Injectable Emulsion

vitamin K–deficiency bleeding

JUST *the* INSERTS

MAKE INFORMED MEDICAL DECISIONS

	AquaMEPHYTON	Phytonadione Injectable Emulsion
ingredients	Phytonadione, polyoxyethylated fatty acid derivative, dextrose, benzyl alcohol (preservative), water, and glacial acetic acid.	Phytonadione, polysorbate 80, propylene glycol, sodium acetate anhydrous, and glacial acetic acid.

indication

For prophylaxis (prevention) and treatment of vitamin K-deficiency bleeding in neonates, as well as other coagulation disorders detailed in the inserts.

warnings + precautions

Fatal and severe hypersensitivity reactions, including anaphylaxis, have occurred with intravenous or intramuscular administration. These reactions have included shock, cardiorespiratory arrest, flushing, diaphoresis, chest pain, tachycardia, cyanosis, weakness, and dyspnea. Administer subcutaneously whenever feasible.

Parenteral (administration of substances outside of the gastrointestinal tract) administration of vitamin K replacements may cause cutaneous reactions. Reactions have included eczematous reactions, scleroderma-like patches, urticaria, and delayed-type hypersensitivity reactions. Time of onset ranged from 1 day to a year after administration.

	AquaMEPHYTON	Phytonadione Injectable Emulsion
warnings + precautions	Risk of serious adverse reaction in infants due to benzyl alcohol preservative. Serious and fatal adverse reactions including “gasping syndrome” can occur in neonates and infants treated with benzyl alcohol preserved drugs. The “gasping syndrome” is characterized by central nervous system depression, metabolic acidosis, and gasping respirations.	
manufacturer-listed adverse reactions	Shock, cardiorespiratory arrest, flushing /weakness, diaphoresis (abnormal sweating), chest pain, tachycardia (fast heartbeat), cyanosis (blue skin), dyspnea (shortness of breath), eczematous reactions delayed reactions up to a year, scleroderma-like patches/lesions, urticaria (hives), erythema (skin reddness), hyperbilirubinemia (jaundice), anaphylactic reactions, dysgeusia (altered sense of taste), fatal hypersensitivity reactions, and dizziness. Hemolysis (breakdown of red blood cells) may occur in newborns if overdosed.	

	AquaMEPHYTON	Phytonadione Injectable Emulsion
manufacturer-listed adverse reactions	Gradual neurological deterioration, seizures, intracranial hemorrhage, hematologic abnormalities, skin breakdown, hepatic and renal failure, hypotension, bradycardia, and cardiovascular collapse.	

nonclinical toxicology

Studies of carcinogenicity, genotoxicity or impairment of fertility have not been conducted with phytonadione.

pediatric concerns

The minimum amount of benzyl alcohol at which serious adverse reactions may occur is not known. Whenever possible, use preservative-free phytonadione formulations in neonates. The preservative benzyl alcohol has been associated with serious adverse events and death in pediatric patients. Premature and low birth weight infants may be more likely to develop toxicity.

vitamin K-deficiency bleeding

https://www.cdc.gov/vitamin-k-deficiency/about/?CDC_AAref_Val=https://www.cdc.gov/ncbddd/vitamink/facts.html

Vitamin K is a substance that our body needs to form clots and to stop bleeding. We get vitamin K from the food we eat. Some vitamin K is also made by the good bacteria that live in our intestines. Babies are born with very small amounts of vitamin K stored in their bodies, which can lead to serious bleeding problems if not supplemented.

Vitamin K deficiency bleeding, or VKDB, occurs when babies cannot stop bleeding because their blood does not have enough vitamin K to form a clot. The bleeding can occur anywhere on the inside or outside of the body. When the bleeding occurs inside the body, it can be difficult to notice. Commonly, a baby with VKDB will have bleeding into their intestines, or into their brain, which can lead to brain damage and even death.

Type of VKDB	When it Occurs	Characteristics
Early-onset	within the first 24 hours after birth	• Severe • Mainly found in infants whose mothers used certain medications (like medicines to treat seizures or isoniazid) that interfere with how the body uses vitamin K

Mothers who take seizure medications or isoniazid may increase the risk of VKDB for their infants.

The following medications may also interfere with how the body uses vitamin K:

+ Anticonvulsants (phenytoin, carbamazepine, and phenobarbital)
+ Antibiotics (prolonged use may disrupt maternal gut flora)
+ Anticoagulants (warfarin)

let's talk about thrombocytopenia

https://medlineplus.gov/ency/article/000586.htm

Thrombocytopenia means there is an abnormally low amount of platelets. Platelets are parts of the blood that help blood to clot. This condition is sometimes associated with abnormal bleeding.

Severe bleeding (hemorrhage) is the main complication. Bleeding may occur in the brain or gastrointestinal tract.

With Vitamin K-Deficiency Bleeding (VKDB) being a concern for newborns, parents need to also be informed thrombocytopenia is a known manufacturer-listed potential adverse reaction to both U.S. licensed Hepatitis B vaccines.

ENGERIX-B [Hepatitis B Vaccine (Recombinant)] injectable suspension, for intramuscular use

Blood and Lymphatic System Disorders

Thrombocytopenia.

https://www.fda.gov/media/119403/download

RECOMBIVAX HB® Hepatitis B Vaccine (Recombinant)
Suspension for intramuscular injection

Blood and Lymphatic System Disorders

Increased erythrocyte sedimentation rate; thrombocytopenia

https://www.fda.gov/files/vaccines%2C%20blood%20%26%20biologics/published/package-insert-recombivax-hb.pdf

According to the CDC Immunization Schedule, the first dose of the Hep B vaccine is recommended at birth, a second dose from 1-2 months old, and a third dose from 6-18 months old. Per the CDC, these correlate with risk timelines for classical and late-onset VKDB.

let's talk about coagulation disorders

https://medlineplus.gov/ency/article/007320.htm

Vitamin K deficiency bleeding (VKDB) of the newborn is a bleeding disorder in babies. It most often develops in the first days and weeks of life.

Per the manufacturers, Phytonadione (synthetic vitamin K injection) is also indicated for treatment of several coagulation disorders.

With this knowledge, parents should also be aware the RSV monoclonal antibody for newborns recommended by the CDC has a manufacturer-listed warning about administering to those with significant bleeding disorders.

BEYFORTUS (nirsevimab-alip) injection, for intramuscular use

5.2 Use in Individuals with Clinically Significant Bleeding Disorders

As with any other IM injections, BEYFORTUS should be given with caution to infants and children with thrombocytopenia, any coagulation disorder, or to individuals on anticoagulation therapy.

According to the CDC Immunization schedule, this product is recommended from birth to 6 months old. The same timeframe the CDC also states a child is at risk for classical and late-onset VKDB.

Other products the CDC recommends during this time period with blood-related manufacturer-listed adverse reactions:

+ Rotavirus Vaccine: Hematochezia (passage of fresh blood from the anus)
+ DTAP Vaccine: Thrombocytopenia

final thoughts

Vitamin K-Deficiency Bleeding (VKDB) is a serious condition that should not be taken lightly. Unfortunately, according to the CDC, “the majority cases of VKDB have no warning signs before a life-threatening event starts.”

With this concern, the risks of other medical products administered with known potential bleeding complications should be discussed with parents, including the Hep B vaccination, the infant RSV monoclonal antibody, the Rotavirus vaccine, and the DTAP vaccine. All are recommended by the CDC when an infant is at the highest risk of VKDB.

Additionally, the known potential risks to the synthetic vitamin K should also be discussed, especially the fatal hypersensitivity reactions in both the preservative and preservative-free versions. For the option with the preservative, the manufacturer warning concerning benzyl alcohol causing serious and fatal adverse reactions including “gasping syndrome” in newborns needs to also be addressed with parents.

Parents deserve to know what manufacturers say about their own products, and government websites like the CDC should reflect all the information available for parents to make informed medical decisions about serious conditions like VKDB.