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VITAMIN K Administration for the Newborn

What is Vitamin K and why is it important for newborn babies?

Vitamin K is a necessary vitamin for blood clotting (required to stop bleeding). Vitamin K is made in the intestines by the good bacteria (gut flora) that grows there and can be ingested in food.

Newborn babies are born without the ability to create their own Vitamin K because newborns do not have good bacteria in their bowels at the time of birth. Human breast milk has a low amount of Vitamin K and newborn babies cannot produce the levels of Vitamin K that adults can until the baby reaches 6-months of age. This means that newborn babies are at a higher risk of bleeds, and without sufficient Vitamin K in their bodies, newborn babies can develop life-threatening bleeding known as Vitamin K deficiency bleeding (VKDB).

Vitamin K Deficiency Bleeding (VKDB):

Vitamin K Deficiency Bleeding (VKDB) can be linked to conditions that already exist in a newborn. These conditions include Cystic Fibrosis, and disorders causing the malabsorption of vitamin K. VKBD can also be caused by particular medications that a pregnant person takes in pregnancy, it the newborn experiences birth trauma (like during an assisted birth requiring a vacuum or forceps), poor feeding, or a delayed onset of newborn feeding, and prematurity (born before 37-weeks). Sometimes VKBD can occur following surgical procedures like circumcision. Unfortunately, VKDB can also occur with **no known cause or risk factor.**

Patterns of Vitamin K Deficiency Bleeding:

- Early Onset: Occurs within **the first 24 hours of life**. Early onset VKDB is linked to those babies who were exposed to some types of medications in-utero, for example: some blood thinners, epilepsy medication, and medication to treat tuberculosis.
- Classic Onset: Occurs **within 2-7 days** of life. Vitamin K levels are naturally lowest at this point and bleeding has been linked to poor feeding patterns.
    - Affects 0.44% of babies who do not receive Vitamin K at birth
- Late Onset: Occurs **between 3-8 weeks of life**. Late onset VKBD is linked to those babies at higher risk because of cystic fibrosis, chronic diarrhea, bowel disease or gallbladder disease.

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- 4-10 infants out of 100,000 newborns are affected if Vitamin K is not administered within 6 hours of the birth. Oral Vitamin K reduces the risk from 4-10 babies out of 100,000 to 1-6 babies out of 100,000.
- Injectible Vitamin K within 6 hours of the birth lowers a newborn's risk to almost zero (approximately 1 out of a million babies)

Implications of VKDB

Any type of uncontrolled bleeding is dangerous, with some bleeding occurring where it cannot be easily seen by a parent, or a care provider (brain and belly area). Unfortunately, bleeding that is not recognized quickly in a newborn baby can result in permanent damage and death to a newborn baby.

Prophylactic (Preventative) Treatment is the standard of care in Alberta. Vitamin K can be routinely given to newborns as an injection into the thigh using a baby-sized needle. Vitamin K can also be given orally in some communities, however the reduction of VKBD risk to babies having the oral Vitamin K after birth is not as low as the injectable Vitamin K option. There is a small chance of bruising or infection at the injection site.

References: Dekker, R. (2014). Evidence for the vitamin k shot in newborns. Retrieved from: www.evidencebasedbirth.com Enkin, M. et.al. (2000) A Guide to Effective Care in Pregnancy and childbirth. Third Edition. Oxford. p.157-158. Puckett, R.M., Offringa, M. (2000). Prophylactic vitamin K for vitamin K deficiency bleeding in neonates. Cochrane Database of Systematic Reviews. Issue 4