Vitamin K Informed Consent/Refusal

Vitamin K, is an essential, lipid-soluble vitamin that plays a vital role in the production of coagulation proteins, it is found in green, leafy vegetables and in oils, such as soybean, cottonseed, canola, and olive oils. The 3 main types of Vitamin K are K-1 (also known as phylloquinone or phytonadione), which is derived from plants; K-2 (menaquinone), which is produced by the intestinal flora; and K-3 (menadione), which is a synthetic. Vitamin K deficiency bleeding (VKDB) is a coagulopathy that develops in infants who do not have sufficient vitamin K stores to support production of clotting factors. Babies are normally born with low levels of vitamin K, an essential factor in blood clotting therefore all babies are at risk for Vitamin K Deficiency bleeding. There are 3 classifications of VKDB:

Vitamin K Deficiency Bleeding

Early: Occurs in babies of mothers on anticonvulsants, especially phenobarbitone and phenytoin or maternal coumarin products. It can also occur if mother is on antituberculous therapy (rifampicin and isoniazid). Women in this situation should be treated with oral vitamin K 20mg/day for 2 weeks prior to delivery.

Classical: Usually bleeding between day 2 and 5. Incidence of 0.4 to 0.7/100 births with no vitamin K prophylaxis. Bleeding sites include intracranial, gastrointestinal and umbilical hemorrhage.

Late: 2-16 weeks of age. Usually occurs in breast fed babies who have not received vitamin K. Bleeding can be severe, 50% are brain bleeds. It can also be associated with poor breastfeeding and maternal vitamin K deficiency. As well as with cholestatic liver disease however this liver disease may be asymptomatic and bleeding is the first clinical manifestation. Incidence of late VKDB ranges from 4.4 to 7.2 per 100,000 infants.

What are the warning signs of VKDB?

- In the majority of cases of VKDB, there are NO WARN- ING SIGNS at all.
- Easy bruising especially around the baby's head and face
- Bleeding from the nose or umbilical cord
- Paler than usual skin color or, for dark skinned babies, pale appearing gums
- Yellow eyes after the baby is 3 weeks old (prolonged jaundice)

• Blood in the stool, black tarry stool, or vomiting blood
• Irritability or high pitched crying, poor feeding, fever, paleness, glassy eyed look, seizures, excessive sleepiness may all be signs of bleeding in the brain.

Prevention:

• Make sure your baby is latched and feeding well after birth. What goes in must come out is your baby voiding and passing meconium. If you suspect that your baby in not feeding well report this to your midwife.
• Take Probiotics: E-Coli, a bacteria present in fecal matter, colonizes the baby's gut causing vitamin K production in the newborn. Assisting your newborns colonization will help ensure K2 production. Vaginal births enhance the newborns contact with E-coli and other healthy bacteria. Antibiotics during and after birth can slow down colonization of the newborns gut.
• Delayed cord clamping allows your newborn to receive all blood components from its placenta.
• Vitamin K oral drops 2 mg per week for 12 weeks
• Vitamin K IM injection 0.5mg -1mg depending on your babies weight. This method is associated with no episodes of VKDB in most countries. However you should be aware that the dosing is 10,000-20,000 times the dose needed. This is in an effort to keep Vitamin K levels normal in the newborn through age 6 months.

Factors that may lead to a Vitamin K deficiency:

• unknown liver disease
• cholestatic Jaundice
• Alpha 1 antitrypsin deficiency
• C-Section
• Vacuum or forceps delivery
• Preterm delivery
• low birth weight baby
• precipitous birth
• Maternal use of anticoagulants, anticonvulsants, antibiotics
• prolonged pushing
• Exclusive breastfeeding

Why do babies have Vitamin K deficiency?

One would say that if every baby born has low vitamin K then it is not a deficiency it is a normalcy of the newborn. In fact newborns are born with an alteration in several of their coagulation factors in fact overall the newborns hemostatic system is different from adults, no surprise there newborns are in fact newborns not adults. Medical researchers have not spent anytime finding answers to why newborns are born with low vitamin K levels thus we do not know why God made them this way or what the benefit to their health is. What we do know is the newborns vitamin K levels rise slowly over the first 6 days of life. Colostrum contains higher levels of vitamin K than the breast milk that follows which allows for a peak in the newborns levels at day 8. However for some reason the risk of VKDB remains for up to the first 12-16 weeks of life.

_____I have read the informed consent regarding vitamin K. I would like my baby to receive the Vitamin K injection. I understand that the standard dose exceeds what my baby's body would normally make and that to date no research has found harmful effects.

_____I have read the informed consent regarding Vitamin K. I would like my baby to receive oral vitamin K. I take full responsibility for administering my baby weekly doses of Vitamin K for 12 week.

_____I have read the informed consent regarding vitamin K. I DECLINE for my baby to be given oral or IM injections of vitamin K I will be responsible for monitoring my baby for signs of VKDB.

Signature: _____

Date: _____