Gentle Beginnings Midwifery
Educational handout
Erythromycin, Vitamin K, Newborn Screen

ERYTHROMYCIN

Chlamydia and Gonorrhea are two sexually transmitted diseases that when passed on to the newborn during a vaginal birth can cause a type of pink eye called Ophthalmia neonatorum (ON) which can cause blindness if not treated appropriately. If the mother does not have chlamydia or gonorrhea, then the newborn cannot catch it.

- Current practice in Ontario is for the mandatory administration of erythromycin ointment 0.5% into the eyes of all newborns to reduce the risk of blindness as stated in the Health Protection and Promotion Act.
- This act requires all health care professionals in Ontario attending a birth to ensure that eye prophylaxis is administered. Thus, this law requires midwives to administer eye prophylaxis to all newborns in their care.
- This means that parents do not have the right to consent to or refuse the administration of neonatal eye prophylaxis as they do all other procedures or treatments for their child, despite the limited evidence of the effectiveness of treatment.
- The ointment is usually put into the baby's eyes an hour to two hours after birth. The baby's vision will be blurred for a short time after the ointment is put in the eyes. The ointment does not cause stinging or pain. Occasionally, a baby may have redness or minor swelling as a result of the ointment.

With our abilities to test and treat chlamydia and gonorrhea, the risk of these infections being transmitted from mother to child at the time of birth is very low.

- Over the course of prenatal care, midwives offer testing and arrange treatment for infectious diseases such as gonorrhea and chlamydia.
- The risk of complications leading to blindness should a newborn develop ON are also very low when there is adequate postpartum follow-up and access to care.

Changes to the legislation are warranted to allow midwives to provide evidence-based care and informed choice in this matter and to enable parents to exercise their autonomy by allowing them the right to decline eye prophylaxis for their newborn if they choose to do so.

VITAMIN K

A baby who does not have enough Vitamin K can start to bleed suddenly, without warning. This is known as Vitamin K deficiency bleeding.

- Vitamin K is a fat-soluble vitamin needed for blood clotting. We cannot make Vitamin K ourselves, and we don't store it very well in our body.
- Vitamin K is necessary for our bodies to activate certain molecules that help the blood to clot. The blood clotting factors are there in normal numbers at birth, but not activated fully due to low levels of Vitamin K. If we do not have enough Vitamin K, then we cannot activate these molecules. So a Vitamin K *deficiency* makes our blood less able to clot.

Vitamin K deficiency bleeding can follow one of three patterns: early, classical, and late.

- **Early VKDB** happens in the <u>first 24 hours</u> of life. Early VKDB is usually seen in babies born to mothers who took medicines that interfere with Vitamin K. These medicines may include warfarin (Coumadin), seizure medications, and tuberculosis medications. The bleeding usually happens in the skin, brain, and abdomen.
- **Classical VKDB** happens in <u>days 2-7 of life</u>, usually during days 2-3. This is when levels of Vitamin K are lowest. Common bleeding sites include the gastrointestinal system, umbilical cord site, skin, nose, and circumcision site. The official cause of classical VKDB is listed as

"unknown," but breastfeeding and poor feeding (<100 mL milk/day or <3.4 ounces milk/day) are major risk factors.

- **Late VKDB** happens after the first week of life, usually during weeks 3-8. The bleeding usually happens in the brain, skin, and gastrointestinal tract. Bleeding in the brain is often the first sign of late VKDB. Late VKDB happens in exclusively breastfed infants **who did not** receive a Vitamin K shot. Some infants may also be at higher risk if they have undetected gallbladder disease, cystic fibrosis, chronic diarrhea, and antibiotic use.

- When infants do not receive any Vitamin K at birth, statistics from Europe show that 4.4 to 10.5 infants out of 100,000 will develop late VKDB.
- When infants receive the Vitamin K shot at birth, anywhere from 0 to 0.62 infants per 100,000 have VKDB. In an 18 year period in the United Kingdom, only two babies who received the shot had late VKDB brain bleeds, out of 64 million births.
- Virtually all cases of VKDB happen in infants who are exclusively breastfed AND who have not received the shot.
    - The only known adverse effects of the shot are pain, bleeding, and bruising at the site of the injection. Out of many millions of injections, there has only been one report of an allergic reaction in recent history.

It is important to note that Vitamin K deficiency bleeding can happen to any infant, whether they are pre-term and full-term, male or female, trauma or no trauma. Researchers have not been able to identify exactly which infants are at highest risk.
The Canadian Pediatric Society along with most of the world recommends that vitamin K_1 should be given as a single intramuscular dose to all newborns within the first 6 h after birth.

NEWBORN SCREEN
Newborn Screening Ontario (NSO) offers screening for serious diseases to all babies born in Ontario. Early identification of these diseases allows treatment that may prevent growth problems, health problems, intellectual disabilities, and sudden infant death. **NSO can test for 29 diseases** including PKU, cystic fibrosis and Thyroid dysfunctions.

- At least twenty-four hours after your baby is born a small sample of blood will be taken from your baby's heel. This sample is collected on a special type of paper and sent to CHEO for analysis.
- These babies appear normal at birth and, without newborn screening, might not be identified to have one of these diseases before irreversible damage has occurred.
- Individually, these diseases are rare, but as a group, they will **affect approximately 150 out of 140,000** babies born in the province each year.
- The results of the screening tests are reviewed to determine if your baby has a lower risk of having a disease ("screen negative") or a higher risk of having a disease ("screen positive").
    - If your baby is "**screen negative**", he or she has a low risk of having any of the 29 diseases screened for. In this case, a report is mailed to your midwife.
    - If your baby is **"screen positive**", this does **NOT** mean that your baby has the disease; however, it does mean that your baby has an increased chance to have the disease. A doctor, genetic counsellor or nurse from NSO may contact you or your midwife directly about the result. NSO's doctors will also refer your baby to doctors at a regional treatment centre for follow-up diagnostic testing to find out if your baby truly has the disease.