

# *Newborn Eye Medication*

## Preventative Treatment for Newborn Eye Infection

### **Why are the newborn's eyes treated with medication after birth?**

Treatment of the newborn's eyes is done to prevent or reduce eye infections, collectively called neonatal ophthalmia. These can be caused by exposure to certain organisms from sexually transmitted diseases, primarily Gonorrhea and Chlamydia. These organisms can infect the newborn if present in the mother's vagina at birth. Gonorrhea is the more harmful bacteria and can cause permanent damage, including blindness, in the early newborn period (although this is now rare in the United States).

### **What is Neonatal Ophthalmia?**

Neonatal ophthalmia is defined as inflammation (called conjunctivitis) that occurs within the first four weeks of life. It is a relatively common illness, occurring in up to 12% of newborn infants. Originally, neonatal ophthalmia referred to conjunctivitis in the newborn caused by infection with *Neisseria gonorrhoeae*, but now the term refers to any conjunctivitis in this age group, regardless of the cause.

*N. gonorrhoeae* accounts for less than 1% of reported cases of neonatal ophthalmia in the United States, while cases due to *Chlamydia trachomatis* varies from 2% to 40%. Rates of ophthalmia by these two sexually transmitted pathogens have declined over the past two decades as a result of the decreased prevalence of these infections in the general population. This can be attributed to the routine prenatal screening and readily available treatments.

In most cases, neonatal ophthalmia is a relatively mild illness. The exception is ophthalmia due to an infection with *N. gonorrhoeae*, called Gonococcal ophthalmia. Without preventative measures, Gonococcal ophthalmia had been observed to occur in 30% to 42% of infants exposed to *N. gonorrhoeae* during delivery and may progress quickly to corneal ulceration and permanent vision impairment. The primary purpose for the use of prophylaxis for neonatal ophthalmia is to prevent disease due to *N. gonorrhoeae*.

### **Aren't women tested in pregnancy?**

Although women are usually routinely tested in pregnancy, no test is 100% reliable and women may be unaware that they have an infection due to a false negative test result or by being infected after the testing period.

### **Wouldn't I know if I had an STD?**

Washington State law states that all babies must be treated prophylactically (preventatively) within two hours of birth. If the newborn's parent(s) or legal guardian refuses this procedure, the health care provider will document the refusal in the newborn's medical record (WAC 246-100-202 (1)(e)) (1).

Symptoms include unusual vaginal discharge, lower abdominal or pelvic pain, bleeding between periods, and burning when urinating, among many more. Some infected people experience symptoms, while others frequently appear asymptomatic.

If your testing was negative and/or you are confident that you and your partner have not acquired either of these infections since then, you may decide not to give this eye medication. It is important that you are absolutely confident of your sexual relationship/history as you cannot rely on absence of symptoms as your indicator of infection.

The Centers for Disease Control reported a decline in *N. gonorrhoeae* prevalence since 1997 in the United States (2). However, it continues to be regularly identified in newborns. American Academy of Pediatrics continues to promote universal prophylaxis to prevent neonatal gonococcal ophthalmia, in addition to routine prenatal screening for *N. gonorrhoeae* and *C. trachomatis*, and treatment of identified infections during pregnancy (3).

## **What is the treatment and when is it given?**

Erythromycin, an antibiotic ointment, is administered to the baby's eyes within the first hour after birth. Although erythromycin is effective against both organisms, gonococcal ophthalmia (eye infection) has occurred despite treatment with erythromycin ointment. While no treatment is 100% effective the risks are significantly reduced with preventative treatment. If a documented maternal gonococcal infection exists, topical erythromycin therapy alone is inadequate and further prophylactic treatments will be required. Erythromycin provides additional protection against other bacterial eye infections and decreases the incidence of local irritation.

This treatment has been proven to reduce the incidence of infection in newborns. However, there have not been any controlled trials which prove this measure is more effective in preventing blindness than careful observation of the newborn (followed by adequate treatment of any conjunctivitis that should appear.) This becomes an issue of weighing the responsibilities of careful observation against the intrusiveness of the treatment.

### **Recommendations for Treatment:**

- When the possibility of infection is suspected, treatment should be administered immediately after birth.
- If a maternal infection is not suspected, the ointment will still be administered unless both parents sign an informed refusal.
- If infection is unsuspected and you have declined treatment, it is still important to watch your baby's eyes for redness, discharge, and swelling.
- If symptoms occur, a culture may be done to test for gonorrhea or chlamydia and to rule out yeast or other vaginal infections.

## **Are there any side-effects of routine treatment?**

Treatment will cause blurry vision for a few hours after being given. We usually delay application for the first hour of life to enable the parents to enjoy the bonding time and the first breastfeeding experience. Afterwards, the newborn exam is completed and the ointment is administered. At this point the baby is usually ready to sleep and the ointment is absorbed while the baby rests.

In some cases the medication may cause localized irritation of the eyelids, known as chemical conjunctivitis. This can lead to an overgrowth of non-susceptible organisms including fungi. Rarely, following an application of erythromycin, sensitivity may occur.

(1) Washington State Law: <http://app.leg.wa.gov/wac/default.aspx?cite=246-100-202>

(2) Center for Disease Control: <http://www.cdc.gov/std/stats12/gonorrhea.htm>

(3) American Academy of Pediatrics: <http://pediatrics.aappublications.org/content/65/5/1047.full.pdf+html?sid=7af1c0a4-e517-4399-9be1-4186825e61b5>