Preventing ophthalmia neonatorum

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The use of silver nitrate as prophylaxis for neonatal ophthalmia was instituted in the late 1800s to prevent the devastating effects of neonatal ocular infection with *Neisseria gonorrhoeae*. At that time – during the preantibiotic era – many countries made such prophylaxis mandatory by law. Today, neonatal gonococcal ophthalmia is rare in Canada, but ocular prophylaxis for this condition remains mandatory in some provinces/territories. Silver nitrate drops are no longer available and erythromycin, the only ophthalmic antibiotic eye ointment currently available for use in newborns, is of questionable efficacy. Ocular prophylaxis is not effective in preventing chlamydial conjunctivitis. Applying medication to the eyes of newborns may result in mild eye irritation and has been perceived by some parents as interfering with mother-infant bonding. Physicians caring for newborns should advocate for rescinding mandatory ocular prophylaxis laws. More effective means of preventing ophthalmia neonatorum include screening all pregnant women for gonorrhea and chlamydia infection, and treatment and follow-up of those found to be infected. Mothers who were not screened should be tested at delivery. Infants of mothers with untreated gonococcal infection at delivery should receive ceftriaxone. Infants exposed to chlamydia at delivery should be followed closely for signs of infection.

La prévention de la conjonctivite néonatale

Le nitrate d’argent a commencé à être utilisé en prophylaxie à la fin des années 1800 pour prévenir les effets dévastateurs de l’infection oculaire à *Neisseria gonorrhoeae* du nouveau-né. À cette époque où les antibiotiques n’existent pas, cette prophylaxie avait force de loi dans de nombreux pays. De nos jours, la conjonctivite gonococcique du nouveau-né est rare au Canada, mais la prophylaxie oculaire demeure obligatoire dans certaines provinces et certains territoires. Les gouttes de nitrate d’argent ne sont plus en marché, tandis que l’efficacité de l’érthromycine, le seul onguent antibiotique actuellement offert pour les nouveau-nés, est douteuse. La prophylaxie oculaire ne prévient pas la conjonctivite à *Chlamydia* avec efficacité. L’application de médicaments dans les yeux des nouveau-nés peut provoquer une irritation oculaire bénigne. Pour certains parents, cette pratique nuit à l’attachement entre la mère et son nourrisson. Les médecins qui s’occupent de nouveau-nés devraient plaider pour la suppression des lois qui obligent la prophylaxie oculaire. Parmi les moyens plus efficaces de prévenir la conjonctivite néonatale, soulignons le dépistage de la gonorrhée et de la *Chlamydia* chez toutes les femmes enceintes et le traitement et le suivi de celles qui sont infectées. Les femmes qui n’ont pas été soumises au dépistage devraient en être à l’accouchement. Les nourrissons de mères chez qui on décèle, à l'accouchement, une gonococcie non traitée devraient recevoir de la ceftriaxone. Ceux exposés à la *Chlamydia* lors de l'accouchement devraient faire l'objet d'un suivi étroit pour déceler tout signe d’infection.

Key Words: Chlamydia; Gonococcus; Neonatal ophthalmia; Prophylaxis; Screening in pregnancy; STIs

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If ocular prophylaxis must be given to comply with provincial/territorial regulations, 0.5% erythromycin base can be used and may be effective in some cases, depending on the antibiotic sensitivity of circulating strains. Povidone-iodine or gentamicin ointment should not be used because of high rates of adverse topical effects.(2,7) To prevent potential cross-contamination, single-use tubes of erythromycin are used. Before administration, each eyelid is wiped gently with sterile cotton to remove foreign matter and to permit adequate eversion of the lower lid. A line of antibiotic ointment, sufficiently long to cover the entire lower conjunctival area, is placed in each lower conjunctival sac, taking care to prevent injury to the eye or the eyelid from the tip of the tube. The closed eyelids are massaged gently to help spread the ointment. After 1 min, excess ointment is gently wiped from the eyelids and surrounding skin with sterile cotton.

**RECOMMENDATIONS**

To prevent neonatal ophthalmia caused by *N gonorrhoeae* and *C trachomatis*, the Canadian Paediatric Society recommends the following:

**Neonatal ocular prophylaxis:**
- Neonatal ocular prophylaxis with erythromycin, the only agent currently available in Canada for this purpose, may no longer be useful and, therefore, should not be routinely recommended.
- Paediatricians and other physicians caring for newborns, along with midwives and other health care providers, should become familiar with local legal requirements concerning ocular prophylaxis.
- Paediatricians and other physicians caring for newborns should advocate to rescind ocular prophylaxis regulations in jurisdictions in which this is still legally mandated.
- Jurisdictions in which ocular prophylaxis is still mandated should assess their current rates of neonatal ophthalmia and consider other, more effective preventive strategies, as outlined below.

**Screening and treatment of pregnant women:**
- All pregnant women should be screened for *N gonorrhoeae* and *C trachomatis* infections at the first prenatal visit.
- Those who are infected should be treated during pregnancy, tested after treatment to ensure therapeutic success and tested again in the third trimester or, failing that, at time of delivery. Their partners should also be treated. Women who test negative but are at risk for acquiring infection later in pregnancy should be screened again in the third trimester.(2,7,28,33) Rescreening for *N gonorrhoeae*, *C trachomatis* and other STIs should be considered in the third trimester for women who are not in a stable monogamous relationship.
- Processes should be in place to ensure communication between physicians and others caring for a woman during pregnancy, and those who will care for her newborn. Information regarding maternal STI screening, treatment and risk factors is crucial to the well-being of the newborn, and must be available to all health care providers caring for the newborn at and following delivery.
- Pregnant women who were not screened during pregnancy should be screened for *N gonorrhoeae* and *C trachomatis* at delivery, using the most rapid tests available.(7,28)

**Managing newborns exposed to *N gonorrhoeae*:**
- A system should be established to ensure that all infants born to mothers found to have untreated *N gonorrhoeae* infection at delivery are treated.
- If the mother’s test results are not available at discharge, a plan must be in place to ensure that she can be contacted promptly if the results are positive. The mother must also be advised to watch her infant for eye discharge in the first week of life and told whom to contact immediately if this symptom develops, or if the child is unwell in any way. When there is doubt about maternal compliance with this recommendation and the mother is considered to be at risk for gonococcal infection, administering one dose of ceftriaxone should be considered for the infant before discharge.
Managing newborns exposed to *C. trachomatis*:

- Infants born either vaginally or by Caesarian section to mothers with an untreated chlamydial infection should be closely monitored for symptoms (eg, conjunctivitis, pneumonitis) and treated if an infection occurs. (2,7,28) Routine cultures should not be performed on asymptomatic infants.
- Prophylaxis of exposed newborns is not recommended because of the association of macrolides with pyloric stenosis, but may be considered when infant follow-up cannot be guaranteed. (7,28)

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REFERENCES


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