

Prevention of neonatal conjunctivitis

Neonatal conjunctivitis, a relatively common disease, is defined as an inflammation of the conjunctiva that occurs during the first four weeks of life. It can be caused by different types of bacteria or, in much rarer situations, by a virus. In most cases, the symptoms will be mild and easily treatable. However, infections due to the presence of the bacteria *Neisseria gonorrhoeae* (responsible for gonorrhoea) or *Chlamydia trachomatis* (responsible for chlamydia) are the exceptions because they can have serious consequences. Infectious conjunctivitis must be distinguished from normal eye discharge in newborns caused by lacrimal obstruction and from conjunctivitis caused by chemicals or irritants.

Typical symptoms of conjunctivitis may include redness of the white of the eye and/or the inside of the eyelid, edema (swelling) of the eyelids and around the eye, a large amount of tears, a thick yellow discharge, a white or green discharge, burning and itching in the eyes, blurred vision and increased sensitivity to light.

Neonatal conjunctivitis cause by gonorrhoea and chlamydia

Gonorrhoea and chlamydia are sexually transmitted and blood-borne infections (STBBI). Women who are carriers are often asymptomatic (have no symptoms). These infections can be transmitted to the newborn during the birth, the mother may not know her condition if she has no symptoms. This situation can cause conjunctivitis in the newborn.

Gonorrhoea affects 52.1/100,000 women of childbearing age. Without preventive measures, neonatal conjunctivitis caused by gonorrhoea occurs in 30-50% of infants exposed at delivery when the mother is a gonorrhoea carrier. It usually appears in the first 2 to 5 days of life and typically results in purulent bilateral conjunctivitis (both eyes). The evolution is rapid, the ocular complications can be severe and lead to blindness if the infection is not treated in time.

Chlamydia is more common, in women of childbearing age the incidence of infection is 846.9/100,000. When the mother is a carrier of untreated chlamydia infection at delivery, there is a risk of transmitting chlamydia to the newborn in 50% of cases, the risk of neonatal conjunctivitis is 30 to 50%. A risk of Chlamydia pneumonia is also present in 10 to 20% of cases. Contamination associated with Chlamydia infection manifests itself as uni or bilateral conjunctivitis (1 or 2 eyes affected), most often appearing within 5 to 14 days of birth. The symptoms are less dramatic and the severity of the infection is usually less than with gonorrhoea. There is usually no corneal damage.

Rates of neonatal conjunctivitis caused by gonorrhoea and chlamydia declined considerably in North America in the 1980s. This is due to the decrease in infections in the general population, the adoption of prenatal screening, and the treatment of infections during pregnancy. Between 2000 and 2011, the Canadian national average of reported chlamydia cases among infants less than 1 year old was 6 cases per 100,000 and gonorrhoea cases were 0.5 cases per 100,000.

Preventive antibiotic treatment

Antibiotic ointment has few known side effects, other than momentary blurring of vision due to its greasy texture. Also, there is a theoretical risk of developing drug-induced conjunctivitis in reaction to the antibiotic. It should be noted that strains of *Neisseria gonorrhoeae* isolated in Canada in 2012 showed significant resistance

to erythromycin. In addition, we now know that administration of an ophthalmic antibiotic ointment is not reliable in preventing neonatal Chlamydia conjunctivitis and does not prevent transmission of Chlamydia infection from mother to newborn.

In Quebec, the prevention of neonatal conjunctivitis by administering an antibiotic ointment in the eyes of all newborns has long been the subject of a public health measure imposed by a Regulation under the Act respecting medical laboratories, organ and tissue conservation and the disposal of cadavers. This section of the regulation was repealed in July 2017. However, the current standard of practice in Quebec is still to offer this prophylaxis to all newborns.

Current Canadian Paediatric Society recommendations for preventing neonatal conjunctivitis caused by gonorrhoea and chlamydia

- ❖ As of March 2015, the Canadian Paediatric Society (CPS) no longer recommends routinely offering erythromycin antibiotic eye ointment to all newborns because it may no longer be useful.
- ❖ The CPS recommends screening all pregnant women for gonorrhoea and chlamydia and monitoring and assessing risk factors as a more effective ways to prevent neonatal conjunctivitis.
- ❖ Infected women should receive treatment, be monitored to confirm the effectiveness of treatment, and be screened in the third trimester of pregnancy. Their partners should also receive treatment.
- ❖ Women who have not been screened should be screened at delivery.
- ❖ Infants of mothers who are found to have gonorrhoea or chlamydia should be treated for gonorrhoea and followed closely for signs of infection if exposed to chlamydia.

References

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