INBRIEF | Summarizing the Evidence

Screening for Chlamydia and Gonorrhea During Pregnancy: A Health Technology Assessment

Key Messages

- Compared with other screening strategies, universal chlamydia and gonorrhea screening at entry into prenatal care plus at another time during pregnancy, appears to result in the highest number of new infections and reinfections being detected, which could lead to better health outcomes.
- It is unclear which specimen type — urine, endocervical, or vaginal — offers better chlamydia and gonorrhea detection rates.
- The cost-effectiveness of a screening program depends on:
  - whether or not the health outcomes of, and associated costs related to, the pregnant person and the infant are considered only during the pregnancy and the postpartum period, and not beyond this time, in which case all screening programs are unlikely to be cost-effective
  - whether or not the general population is at high risk of infection, the cost of pediatric infection treatment is high, or chlamydia or gonorrhea infections cause adverse pregnancy outcomes (an association that is currently unclear), in which case universal screening could be a cost-effective strategy
  - whether or not infection consequences such as pelvic inflammatory disease and infant blindness during the lifetime of the pregnant person and the infant are considered, in which case universal screening in both the first and third trimesters could also be a cost-effective strategy.
- Universal screening could help minimize stigma and discrimination, and therefore improve screening compliance.
- The clinical evidence was limited in quantity and quality, which resulted in limitations to the cost-effectiveness analysis.

Context

Chlamydia (which is caused by the bacterium *Chlamydia trachomatis*) and gonorrhea (which is caused by the bacterium *Neisseria gonorrhoeae*) are the most commonly reported sexually transmitted infections in Canada. In pregnant persons, these infections can result in serious health complications if left untreated, including spontaneous abortion, stillbirth, infant death in the first week of life, preterm delivery, and low birth weight. Both chlamydia and gonorrhea can be transmitted to babies during childbirth, which can cause babies to later develop conjunctivitis (an eye infection) in the case of gonorrhea, and conjunctivitis and/or pneumonia in the case of chlamydia.

Technology

Screening pregnant persons for chlamydia and gonorrhea ensures that the infection, if present, can be treated before it causes health risks to the parent and the baby. There are many potential approaches to screening: different screening tests can be used (e.g., a variety of different nucleic acid amplification tests or a cell culture test) and different specimens can be used (i.e., a urine sample, or a vaginal or cervical swab). Screening can be provided universally to all pregnant persons or in a targeted manner to those identified as being at high risk of infection. And screening can be provided once or multiple times during pregnancy and at different times during pregnancy.

Issue

The rates of chlamydia and gonorrhea infection are rising despite numerous prevention and treatment strategies. An assessment of the clinical effectiveness, safety, cost-effectiveness, and perspectives and experiences of pregnant persons, their partners, and health care providers will help provide guidance on the optimal approach to screening for chlamydia and gonorrhea during pregnancy.

CADTH

Methods

CADTH conducted a systematic review of comparative clinical studies on the detection yield, clinical utility, and harms of different screening strategies for detecting chlamydia and/or gonorrhea during pregnancy. An economic analysis was also undertaken to determine the most cost-effective screening strategy in pregnant persons and their infants up to the postpartum period. A review of the perspectives and experiences of pregnant persons, their partners, and their health care providers when it comes to undergoing screening for sexually transmitted infections was also conducted.

Results

Clinical Review

The clinical review suggests that universal chlamydia and gonorrhea screening strategies are likely to be more effective than targeted ones (i.e., based on age or other risk factors) because pregnant persons who are infected will not be identified and treated if they do not meet targeted screening criteria. It also suggests, overall, that providing a second universal screening test during pregnancy, in addition to one given at the initial prenatal care visit, might result in more infections being detected compared with screening only at entry into prenatal care. This is because the second screening test may detect a new infection or reinfection. It is not clear if early detection and treatment improves neonatal outcomes.

Economic Review

Universal screening in the first and third trimesters appears to be the costliest strategy, although it could generate the most health benefit. The cost-effectiveness is dependent on the potential magnitude of harm from undiagnosed chlamydia and gonorrhea infections, and the costs associated with managing these outcomes. If the outcomes only up to the postpartum period are considered, the clinical benefit of universal screening would be considered marginal. But when outcomes over a lifetime time horizon are considered, universal screening could be the most cost-effective screening strategy, given the additional benefit that could be realized for the pregnant person, the person's child, and even to the person's partner over the longer time period.

Patients' Preferences and Experiences

The review of the preferences and experiences of patients found that a universal approach to chlamydia and gonorrhea screening may be perceived as less stigmatizing and discriminatory, and might therefore improve participation rates in screening programs.

Read more about CADTH and its review of screening for chlamydia and gonorrhea during pregnancy:

https://cadth.ca/screening-chlamydia-trachomatis-and-neisseria-gonorrhoeae-during-pregnancy

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Ce document est également disponible en français.

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