Gonorrhea makes a comeback

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Until 1997 it seemed that gonorrhea rates were declining in Canada. However, since then, outbreaks of gonorrhea have occurred across Canada. Currently, there are at least 10,000 cases of gonorrhea in Canada each year. These outbreaks are not occurring in isolation—parallel outbreaks of gonorrhea, syphilis and other sexually transmitted infections (STIs) are also happening in other high-income countries. Like many other STIs, gonorrhea can cause inflammation and enhance vulnerability to HIV infection.

Transmission

Gonorrhea results from inflammation caused by infection with *N. gonorrhoeae* bacteria. These germs can be spread in the following ways:

- unprotected contact with the anus, penis, throat or vagina
- from an infected mother to child during birth

The bacteria that cause gonorrhea can infect the wet tissues of the mucosa in the genitals and throat, causing inflammation. If left untreated, gonorrhea can cause serious complications. That is why it is important for sexually active people to engage in safer sex and to have regular checkups.

Symptoms

Gonorrhea germs can cause different symptoms and complications in men and women.

**Men—uncomplicated genital infection**

Gonorrhea germs can cause inflammation of the urinary tract between one and 10 days after initial exposure. Symptoms can include the following:

- painful urination
- leakage of a thick pus-like fluid from the tip of the penis

Note that a small proportion of men can have gonorrhea inside their penis without any obvious symptom.

**Men and women—rectal infection**

Gonorrhea in the rectum can occur in cases of unprotected anal intercourse. In such cases, rectal gonorrhea can be symptom free or can be accompanied by any of these symptoms:

- anal itching
- rectal pain
- a thick fluid oozing from the anus
- rectal bleeding

**Men and women—throat infection**

In cases of oral sex with an infected partner, the throat can become infected (pharyngeal gonorrhea) with
symptoms such as the following:

- difficulty swallowing
- fever
- swollen lymph nodes in the neck

However, pharyngeal gonorrhea can occur without any obvious symptoms.

**Men and women—eye infection**

Gonorrhea can cause painful eye inflammation. Usually this happens in people who have genital gonorrhea.

**Men and women—perihepatitis**

Gonorrhea-causing germs can spread from the genitals, perhaps through the lymphatic system, to the liver, causing inflammation in that organ. Affected people can have pain and tenderness in their upper right abdomen (where the liver is). In some cases, blood tests may detect increased levels of liver enzymes in the blood, suggestive of liver inflammation.

**Women—uncomplicated genital infection**

In most women, gonorrhea-causing germs can infect the opening of the womb. Some infected women do not initially develop symptoms of genital gonorrhea. Among those who do, these symptoms usually occur within 10 days of exposure and can include the following:

- a thick fluid oozing from the vagina
- painful urination

**Women—pelvic inflammatory disease (PID)**

Researchers estimate that between 10% and 20% of women with gonorrhea can develop PID as the gonorrhea germs spread into the reproductive tract and organs, causing inflammation and damage. A range of symptoms can subsequently develop as follows:

- fever, chills
- lower abdominal pain
- cervical pain
- increased bleeding or cramps during periods
- bleeding between periods
- urinating frequently
- painful urination
- lower back pain

If left untreated, PID can cause chronic pelvic pain, infertility and other complications.

**Lab and other tests**

Gently scraping or swabbing a sample of mucus from the genitals, rectum or throat can be useful in growing and identifying *N. gonorrhoeae* in the lab. This type of testing is called culturing. However, in some parts of Canada culture for gonorrhea is not available. Instead, a different type of test called NAAT (nucleic acid amplification test) is used. NAAT is very useful in finding gonorrhea-causing germs.

In some cases of PID, doctors may insert a tiny tube with a miniature camera at the end into an incision just below the belly button. This is helpful when trying to examine tissues such as the ovaries, fallopian tubes and uterus. Either a local or general anaesthetic is given to women during this procedure to minimize pain.

**Treatment**
The Public Health Agency of Canada (PHAC) preferred treatment for people aged nine years or more is:

- the antibiotic cefixime (Suprax) 400 mg in a single oral dose

Alternative treatments for people who are not pregnant or nursing can include the following:

- ceftriaxone 125 mg given as a single intramuscular injection
- azithromycin 2 g in a single oral dose
- spectinomycin 2 g in a single intramuscular injection. Note that this antibiotic is available only through Health Canada's Special Access Programme (SAP). Further information about how to contact the SAP appears later in this bulletin.

In Quebec

In this province, the preferred treatment for gonorrhea is a single intramuscular injection of ceftriaxone 125 mg.

Women who are pregnant or nursing

PHAC’s preferred treatment for pregnant or nursing women is the same as for other people (cefixime). However, PHAC recommends a more limited range of alternative treatments, as follows:

- ceftriaxone 125 mg in a single intramuscular injection
- spectinomycin 2 g in a single intramuscular injection

Disseminated gonorrhea

In cases where gonorrhea has spread to the eye or is otherwise widespread in the body, PHAC recommends this:

- ceftriaxone 2 g daily given either intravenously or intramuscularly and doxycycline 100 mg orally twice daily, for seven consecutive days

In some cases of disseminated gonorrhea, hospitalization may be necessary.

Don’t forget Chlamydia

PHAC, like most public health authorities in high-income countries, recommends that after gonorrhea treatment is administered treatment for Chlamydia is also necessary, as co-infection with these germs is common. Preferred treatment for Chlamydia for adults who are not nursing or pregnant is as follows:

- doxycycline 100 mg orally twice daily, for seven consecutive days
- azithromycin 1 g in a single oral dose

For women who are pregnant or nursing, PHAC prefers one of these treatments for Chlamydia:

- amoxicillin 500 mg three times daily, for seven consecutive days
- erythromycin 2 grams per day, for seven consecutive days
- erythromycin 1 gram per day, for 14 consecutive days

Disappearing Cipro

In the past, a group of antibiotics called quinolones—such as ciprofloxacin or ofloxacin—were routinely used for the treatment of gonorrhea. However, gonorrhea-causing germs have been developing resistance to these antibiotics and now many high-income countries, including Canada, Australia, the U.S. and UK, no longer recommend the use of these antibiotics for gonorrhea.

Dwindling treatment options

Researchers in the Asia-Pacific region were among the first to report the detection of quinolone-resistant gonorrhea nearly two decades ago. Now researchers in that region have reported another troubling trend—gonorrhea appears to be gradually building up the ability to resist ceftriaxone. So far this problem is not widespread but it is likely a harbinger of things to come. Also in the Asia-Pacific region, there are isolated reports of gonorrhea slowly increasing...
in its ability to withstand treatment with spectinomycin.

It is possible that increasing the dose of ceftriaxone from 125 mg to 250 mg might delay the appearance of ceftriaxone-resistant gonorrhea. However, this is just a theory that would need to be confirmed in clinical trials and there is no medical consensus about it. In the UK, the British Association for Sexual Health and HIV (BASHH) recommends ceftriaxone at a dose of 250 mg for the treatment of gonorrhea.

Reports have also emerged from authorities in the UK of gonorrhea resistant to azithromycin.

All of these reports underscore the following:

- the urgent need to strengthen safer-sex behaviour
- the need for more research on new treatments for gonorrhea

Resources

1. **Contacting the Special Access Programme (SAP)**

   The SAP exists to help facilitate access to drugs that are not licensed in Canada. Spectinomycin is an antibiotic that falls under this category.

   Physicians interested in finding out more about the SAP can contact:

   Special Access Programme
   Therapeutic Products Directorate
   2nd Floor, Holland Cross, Tower A
   11 Holland Avenue, A.L. 3002C
   Ottawa, ON, K1A 0K9
   Telephone: 1.613.941.2108
   Fax: 1.613.941.3194
   email: SAPdrugs@hc-sc.gc.ca

2. **Guidelines for diagnosis and treatment**


   Next up in *CATIE News*: research on gonorrhea of the throat in Canada.

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**REFERENCES:**


Disclaimer

Decisions about particular medical treatments should always be made in consultation with a qualified medical practitioner knowledgeable about HIV- and hepatitis C-related illness and the treatments in question.

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