Toronto Public Health urges vaccination against bacterial meningitis for MSM travelling to New York

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Since 2010 an outbreak of bacterial meningitis has been occurring in New York City among men who have sex with men (MSM). Twenty-two cases have been reported, including four in 2013. The age of cases ranged between 21 and 59 years. Public health authorities in New York have disclosed that seven of the 22 infected people have died, including three from the most recent five cases. Furthermore, 12 of these cases of bacterial meningitis have occurred among HIV-positive men, five of whom have died. The bacteria responsible for this outbreak are *Neisseria meningitidis* serogroup C.

In Canada

Cases of meningitis related to the New York outbreak have not been reported in Canada. However, because of travel and subsequent connections between sexual networks of MSM in the U.S. and Canada, Toronto Public Health has made the following recommendation:

“Physicians offer the vaccine (sold as Menactra, Menveo, also known as the ACYW-135 meningococcal conjugate vaccine) to MSM who are planning to travel to New York City and who are either [HIV-positive] or who may have close or intimate contact with other men met either through an online website, or digital app, or at a bar or party in New York City.”

This recommendation by Toronto Public Health is prudent because there have been outbreaks of bacterial meningitis in MSM in Toronto in the past. San Francisco’s Department of Public Health has made a similar recommendation for MSM travelling to New York who may have sex or close contact with MSM there.

Note that public coverage of these vaccines may not be subsidized for MSM in every region; check with your family doctor or local public health authorities. However, because an outbreak is underway in New York, that city’s Public Health Department is offering free vaccinations to its MSM residents.

The vaccine takes about two weeks to work and should be effective for up to five years in adults. Therefore, vaccination at least two weeks prior to travel to New York City is a good idea.

About meningococcal meningitis

*N. meningitidis* can be found in the nose and throats of about 10% of healthy adults in North America and Western Europe. In these regions, outbreaks of meningococcal disease are relatively common among infants in the first year of life, and in young people aged 15 to 25 years. Usually these germs do not cause disease except in people who are susceptible to them.

Transmission and risk factors

In general, being in close personal contact with a person who has meningococcal disease helps the spread of infection. Transmission occurs when one inhales the tiny droplets that are released when an infected person coughs or sneezes. Outbreaks of meningococcal disease have been linked to the following locations:

- *Crowded conditions* such as those found in university dormitories, military training centres and barracks,
The following factors have been associated with the spread of and susceptibility to *N. meningitidis*:

- intimate contact – including wet kissing and sex
- sharing food utensils, drinks, toothbrushes and so on
- smoking cigarettes or inhaling second-hand smoke – this damages the delicate cells lining the nasal passages and throat

The following populations are at increased risk for bacterial meningitis caused by *N. meningitidis*:

- people who have or had a recent viral infection (such as the flu) that has affected the throat and nasal passages
- people with weakened immune systems, including people who have inherited immune deficiencies, people whose spleens are malfunctioning or who have had their spleens removed, people with sickle cell anemia and people who have received a transplanted organ or tissue. The Public Health Agency of Canada notes that HIV-positive people are at heightened risk for meningococcal infection.
- MSM
- travellers to regions where there are relatively high rates of meningococcal disease, such as sub-Saharan Africa, and pilgrims on the Hajj who have visited Mecca, Saudi Arabia

**Signs and symptoms**

After becoming exposed to *N. meningitidis*, susceptible people usually develop symptoms of meningococcal disease within one to 10 days. Common symptoms in adults include the following:

- rash – this appears as red or purplish lesions caused by bleeding under the skin
- meningitis - initial symptoms can include headache of growing intensity, fever, nausea and vomiting. Severe muscle or abdominal pain may also occur. Later, other symptoms appear, including neck stiffness and sensitivity to light. As the membranes surrounding the brain become inflamed, additional symptoms such as confusion, agitation, seizures and loss of consciousness can develop.

In cases where the infection has spread throughout the body, additional symptoms such as cold hands and feet, and painful limbs have been reported.

**Treatment**

People with meningococcal disease can die from shock and elevated pressure squeezing the brain, so these complications need to be managed. Recommended treatments include intravenous administration of the antibiotic ceftriaxone (Rocephin) or cefotaxime (Claforan) for up to a week in cases of uncomplicated meningitis.

**Complications**

Despite intensive medical care and treatment, about 10% of people with meningococcal disease die. Furthermore, complications can occur due to death of skin and soft tissue in the feet, arms and legs. Dead tissue can obstruct the flow of blood, causing further damage, and limb amputation may be necessary in such cases.

Other complications that have been reported include loss of hearing and persistent pain.

**Protecting friends and family**

People living with and who have had sex with someone who has been recently diagnosed with meningococcal disease are at high risk for infection by *N. meningitidis* and developing disease caused by this germ. This risk falls about six weeks after the infected person has been exposed. However, the risk for meningococcal disease still remains elevated for up to one year after exposure to the infected person.

To prevent the development of meningitis in partners and family members of someone who has been diagnosed with infection by *N. meningitidis*, doctors can prescribe a single injection of the antibiotic ceftriaxone or different formulations of other antibiotics depending on their region.
A focus on MSM

Over the past 40 years, researchers in Canada, Denmark, the U.K. and the U.S. have reported finding the presence of *N. meningitidis* in the throat, rectum and urethra of MSM. In these reports, particularly from the 1970s, '80s and '90s, the bacteria did not appear to commonly cause severe disease in MSM in high-income countries. However, in the past decade, reports have emerged of outbreaks of bacterial meningitis among MSM in Toronto, New York, Chicago and California. Furthermore, an outbreak of bacterial meningitis is underway in New York City, with a few isolated and unrelated cases, according to public health authorities, occurring among gay men in Southern California. These outbreaks may occur because the bacteria that cause meningitis are relatively common in some MSM.

Resources

Toronto Public Health fact sheet on meningococcal disease

Toronto Public Health meningococcal C vaccine alert

Canadian Immunization Guide for meningococcal vaccines

New York City Department of Health alerts

Los Angeles County Public Health meningococcal disease page

San Francisco Public Health Advisory on Invasive Meningococcal Disease

—Sean R. Hosein

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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