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Typhoid Fever Update

Background

In 2009, there were 76 confirmed cases of typhoid fever in Ontario, 34 of which were in Peel Region. Cases are almost always associated with travel to endemic regions, including South and Southeast Asia, the Middle East and Northeast Africa.

- Typhoid fever is caused by *Salmonella Typhi*.
- *S. Typhi* is transmitted through the fecal-oral route, generally through contaminated water, shellfish or through contact with cases.
- The incubation period ranges from 3 to 60 days but is typically between 8 to 14 days.
- Typhoid fever is communicable as long as *S. Typhi* is excreted in stools or urine.

Diagnosis¹

- *S. Typhi* can be isolated early in the disease through serology or diagnosed via lab confirmation of a urine or stool specimen after one week (positive *S. Typhi* culture), with or without clinical signs or symptoms.
- Sensitivity testing should always accompany cultures to identify antibiotic resistance.

Clinical Presentation¹

Symptoms are highly variable, ranging from fever to sepsis and other complications. Non-complicated typhoid fever includes a prolonged low-grade fever and may include any of the following:

- dull frontal headache
- malaise
- myalgia
- dry bronchitic cough
- anorexia

- nausea
- abdominal discomfort
- constipation or diarrhea
- small erythematous maculopapular lesions on trunk (rose spots) in up to 25% of fair skinned individuals

More severe symptoms include confusion and delirium. 10-15% of cases develop gastrointestinal bleeding, intestinal perforation, and encephalopathy.

Treatment²

Current drugs of choice for the treatment of adults are fluoroquinolones or third generation cephalosporins.

However, fluoroquinolones are **not** recommended as the first line of treatment if the infection is believed to have been acquired in South Asia or other regions with high fluoroquinolone resistance, until antibiotic susceptibility data demonstrate sensitivity. Alternative agents for such cases include azithromycin.

Treatment and follow-up are essential in containing the spread of disease to contacts. Follow-up protocols involve the collection of three consecutive negative stool specimens, one week apart.

Typhoid fever (including paratyphoid or enteric fever) is a reportable disease. Please report suspect and confirmed Typhoid fever cases immediately to Peel Public Health at (905) 799-7700. Peel Public Health is also required to report follow-up results to the MOHLTC.

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¹ Infectious Diseases Protocol, MOHLTC, 2009.

² UpToDate®. www.uptodate.com/online/topic.do?topicKey=gi_infec/7726&view=print

Carriers¹

- Individuals are considered to be carriers if they continue to test positive after 6 samples (collected one week apart).
- Some patients are more at-risk to become carriers, particularly middle-aged females and individuals with biliary tract abnormalities including gallstones.³
- Carriers must be excluded from food-handling, health care and child care activities until no longer in the carrier state.
- 2-5% of cases become chronic carriers (> 1 year post-illness).

Prevention

The following prevention messages are important to review with patients:

- Consider vaccination for household members of known carriers, and persons travelling to endemic high risk areas.⁴
- Practice safe food and water precautions while travelling in endemic areas.
- Encourage proper hand washing prior to food preparation and eating, and following use of sanitary facilities.

Patients with typhoid fever should be excluded from food handling, healthcare and daycare activities until three consecutive stool specimens, collected one week apart, are negative.

Travel Medicine

Travel Clinics in Peel

A growing number of international travellers are seeking medical advice prior to travelling. There are a number of travel medicine clinics in Peel Region. For a listing visit:

<http://www.phac-aspc.gc.ca/tmp-pmv/travel/clinic-eng.php>

Travel Medicine Physician Resources

The following links provide useful travel medicine resources for Canadian practitioners.

Statements by the *Committee to Advise on Tropical Medicine and Travel* (CATMAT):
<http://www.phac-aspc.gc.ca/tmp-pmv/catmat-cmmtmv/index-eng.php>

- International Travel and Health, WHO:
<http://www.who.int/ith/en/>
- Health Information for International Travel (The Yellow Book):
<http://wwwn.cdc.gov/travel/contentYellowBook.aspx>

In addition to making referrals to a travel clinic, patients will also benefit if you:

- Review immunization records and ensure patients are up-to-date.
- Assess health of patient prior to and return from travel.
- Ensure patients have prescriptions filled for the duration of travel.
- Provide counselling for appropriate vaccines.
- Reinforce safe food and water precautions (ie. "boil it, cook it, peel it or forget it").
- Reinforce hand washing as the best prevention.

³ CCD Manual, 19th Ed., 2008.

⁴ Typhoid vaccine is not publicly funded. Patients must visit a Travel Clinic to receive the vaccine.