Northern Health Physicians
Partners in Wellness

Public Health Newsletter for Northern Health Physicians

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Summer Exposures-Animal Bites

Warmer weather is upon us and with that a tendency for northerners to spend time in the beautiful wilderness options northern BC has to offer. We felt it might be useful to provide local physicians with some up to date information relevant to common exposures/presentations you may see in your office over the coming months.

Animal Bites in BC

My patient was bitten or scratched by an animal - now what?

1. Irrigate and treat the wound
2. Provide tetanus booster if needed
3. Assess the risk of rabies, If you believe the rabies risk is significant, or are uncertain, contact the MHO on-call to discuss the need for rabies post-exposure prophylaxis (RPEP). Note that MHO approval is needed to release RPEP in BC.

Rabies is essentially 100% fatal and 100% preventable. RPEP should always be given promptly when a significant risk of rabies exposure is identified.

However, RPEP as with any medical treatment does have some associated risks and thus the appropriate provision of RPEP must align with a risk-benefit assessment. RPEP should not be provided in situation where risk is negligible. RPEP should generally be provided when both the following conditions are met:

- The exposure was significant: a bite, a scratch, or a mucous membrane or broken skin exposed to the animal's saliva: **and,**
- There is a non-negligible risk that the animal had rabies.

Could the animal have rabies? Generally, rabies is a virus of bats and terrestrial mammals (dogs, cats, raccoons, foxes, etc.).

- There are many different strains of rabies virus, and each strain generally only infects specific species of mammals . Different strains are present in different parts of the world.
- **In BC, rabies is only known to circulate among bats**, (estimated prevalence <0.5%). It is very rate for bat-variant rabies to "spill over" into other animals (approximately 10 documented instances in BC history).
- Other Canadian provinces have different rabies epidemiologic profiles, with mammalian variants also being potential hosts for rabies virus (e.g. raccoon, skunk, fox, etc.).

Elsewhere in the world, other mammal species are at risk of rabies, especially in Asia and Africa where dog variant rabies causes the most human cases.

Given this epizoology, animals that are considered potentially at risk of rabies in BC are limited to bats, and terrestrial mammals that meet one of the following conditions:

- Have displayed abnormal neurological behaviour and/or other signs of rabies, such as abnormal gait, paralysis, erratic movement, hyper salvation, excessive docility, or clearly unprovoked aggressiveness;
- Have tested positive for rabies;
- Are known to have interacted with a bat in BC in the preceding 6 months; or
- Are known to have been recently imported in the preceding 6 months from, or travelled to, a region endemic for rabies virus strains that may infect that type of mammal.

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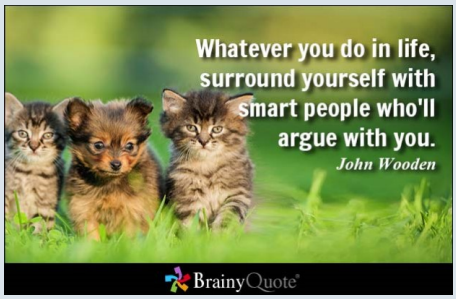
Notable Quotable:



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After hours calls to UHNBC Switchboard 250-565-2000 and ask for the MHO on-call

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the northern way of caring

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An apparently unprovoked attack by an otherwise physically well, terrestrial animal, that does not meet the above criteria, is generally **not** considered indicative of rabies.

If a domestic animal meets one or more of these criteria, the risk to human health can be evaluated further through either a 10-day observation period, or through laboratory testing for rabies virus. (Testing requires euthanasia of the suspect animal.)

Given our local epizoology, most animal (non-bat) exposures that occur in BC do not require RPEP. There has only been one document case of rabies in a human in recent BC history; this case was due to exposure to a bat. **The risk of rabies should be assessed differently for animal exposures that occur outside of BC.**

Animal bites are not reportable in BC. However, physicians and veterinarians that become aware of an animal bite or other animal exposure scenario that meets any of the above-listed criteria, should inform Northern Health Authority.

For further details on how rabies risk is assessed by public health professionals, RPEP schedules and dosing, and other background information, please see the BCCDC's rabies guidelines in Chapter 1 of the Communicable Disease Control Manual at http://www.bccdc.ca/health-professionals/clinical-resources/communicable-disease-control-manual.

The guidance provided to BC veterinarians can be found here: http://www.bccdc.ca/Documents/BC%20Rabies%20Guidance%20for%20Veterinarians_Nov%202017.pdf

Article Credit: Interior Health Authority: Medical Health Officers Update for Physicians (May 24, 2017) https://www.interiorhealth.ca/AboutUs/Leadership/MHO/MHO%20Updates/MHO%20Update%20-%20May%2024,%202017.pdf

Summer Exposures - Tick Bites

Background on Ticks in northern BC: Ticks with Lyme disease carrying **potential** (*Ixodes pacificus* and *Ixodes angustus*) are known to be present in low levels in the north. **The most common ticks found in the Northern Health region are Rocky Mountain Wood Ticks** (*Dermacentor andersoni*). Rocky Mountain Wood Ticks have not been implicated with Lyme disease, however, they also could cause tick paralysis and have the potential to carry rickettsial pathogens. In Canada, the only rickettsial disease observed to occur via tick transmission is Rocky Mountain Spotted Fever.

Tick Paralysis: This rare disease does occur in B.C., though it is not reportable.

- Characterized by an acute, ascending, flaccid paralysis resulting from exposure to a neurotoxin released by tick salivary glands during feeding.
- Mostly occurs in younger children and elderly early in the spring.
- Ticks can be attached to the scalp or neck and concealed by hair.
- In patients presenting with tick paralysis, examination often reveals an attached tick.
- Once the tick is removed, paralysis usually resolves within 24 hours.
- There is no test to confirm tick paralysis as the neurotoxin produced by the tick and its mechanism of action are not fully understood.
- Patients presenting with initial signs and symptoms of acute paralysis should have a physical exam searching for a tick.

BCCDC information on Tick paralysis: http://www.bccdc.ca/health-info/diseases-conditions/tick-paralysis

Rocky Mountain Spotted Fever:

- The causative agent of RMSF is Rickettsia rickettsia. In northwestern US and western Canada, it is spread by the Rocky Mountain wood tick-Dermacentor andersoni.
- The incubation period ranges from two to 15 days.
- Symptoms may include: fever, rash, a scab at the bite wound, inflammation of the blood vessels and/or lymph system.
- More serious forms of illness can include: hepatosplenomegaly, bleeding, renal failure, heart failure, neurological problems.
- Overall, the fatality rate varies and is generally low, especially with treatment. It increases with age, and can reach 30 per cent or more if left untreated.
- **Laboratory Diagnosis**
  - BCCDC Public Health Laboratory Offers testing for RMSP. Serologic assays are the most frequently used methods for confirming cases of RMSF. A 5-7 ml mlood sample in a serum separator tube should be collected after 7-10 days after the onset of illness. Eighty-five percent of patients will not have detectable antibody titers during the first week of illness, and a negative testing during this time does not rule out RMSF. For that reason a convalescent-phase samples should be collected 2-4 weeks after first sample or after the resolution of illness.
  - PCR detection of R. rickettsii in whole blood in EDTA tube is possible but less sensitive because low numbers of rickettsiae circulate in the blood. Furthermore early antibiotic intervention may decrease the sensitivi-

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- **Treatment**
  - For details around appropriate antibiotic treatment please see Do Bugs need Drugs http://www.bugsanddrugs.org/

Acute Lyme disease: None of the Lyme disease cases that have been diagnosed in Northern Health were exposed locally (i.e. they were either exposed elsewhere in BC, Canada or internationally).

- Most people do not notice the tick bite or attachment when it occurs.
- About 60-70% of all newly infected patients with Lyme disease will develop an expanding circular red (erythema migrans) rash from 3-10 days after the bite.
- Laboratory tests support clinical care when used correctly and are performed using validated methods in an accredited laboratory.
- In B.C., laboratory testing to diagnose Lyme disease is done by the BCCDC Public Health Laboratory (PHL).
- Routine antibiotic prophylaxis is not indicated for tick bites in BC, as harm is more likely than benefit**.** Reassure patients who present with tick bite that Lyme disease is currently extremely uncommon in northern BC, but counsel patients to return for assessment if symptoms consistent with Lyme disease occur. Outcomes are generally very good when Lyme disease is treated early.

BCCDC information on Lyme disease: http://www.bccdc.ca/health-info/diseases-conditions/lyme-disease-borreliaburgdorferi-infection

Health Canada/Public Health Agency of Canada: https://www.canada.ca/en/public-health/services/diseases/lymedisease.html

How to remove a tick
Grasp the tick by its mouth as close to the skin as possible with tweezers or other device and pull outwards, avoiding injecting the tick's stomach contents into the skin. Smothering methods for tick removal are ineffective and increase risk of injection of infected material into the client.

Testing
NOTE: Physicians wishing to test ticks are to contact BCCDC PHL's Parasitology Laboratory at (604) 707-2629.

For questions regarding testing of humans, call BCCDC PHL's Zoonotic Diseases and Emerging Pathogens Laboratory at (604) 707-2628. Ticks are not forwarded from Public Health (PH) Offices and patients should not be directed to PH offices with ticks.

Drinking Water in the Wilderness

Parasites and certain bacteria are common in any surface water source, such as: lakes, streams and rivers, and can contaminate water that humans use for both drinking, eating, and recreation. Patients should be advised not to drink untreated water in the wilderness. Adequate treatment requires either boiling (for at least 1 minute) or filtering (1 micron or smaller). Bleach alone does not work well in killing Giardia ("beaver fever") or Cryptosporidium parasites.

Clinical illness for Giardia is characterized by diarrhea, abdominal cramps, bloating, weight loss, or malabsorption. Although generally not a serious illness, it can have some long lasting side effects if left untreated - an issue primarily for people whose immune systems are weakened. Clinical illness for Cryptosporidium is characterized by frequent watery diarrhea, abdominal cramps, loss of appetite, low-grade fever, nausea, and vomiting. The illness may be prolonged and life-threatening in severely immunocompromised persons due to severe dehydration.

Treatment:
People with healthy immune systems normally clear Giardia and Cryptosporidium infections over the course of a few weeks without treatment. Giardiasis does also respond fairly well to anti-parasitic medication. Cryptosporidium is usually self-limiting in immunocompetent patients. If diarrhea is severe or prolonged, treatment with Nitazoxanide can be considered (see http://www.bugsanddrugs.org/), however, it has to be requested through Health Canada's Special Access Program. For immunocompromised patients, consult an Infectious Disease specialist.

Testing:
Requisitions for submitting clinical specimens (Microscopic examination of stool sample) can be found under the "parasitology" section http://www.bccdc.ca/health-professionals/professional-resources/laboratory-services

Useful links:
information, see HealthLinkBC File #49b Disinfecting Drinking Water, HealthLinkBC File #10 Giardia Infection, and HealthLinkBC File #48 Cryptosporidium Infection.

Source:
Dr. Raina Fumerton, Medical Health Officer
Dr. Eleni Galanis, Public Health Physician
Dr. Erin Fraser, Public Health Veterinarian
Dr. Muhammed Morshed, Clinical Microbiologist

AMS Topic of the Month: Helicobacter Pylori Treatment in NH

Guidelines now recommend quadruple therapy regimens over clarithromycin triple therapy (proton pump inhibitor + clarithromycin + either amoxicillin or metronidazole) for first-line treatment of *H pylori* infection due to increasing rates of resistance with clarithromycin.[1,2,3]

The recommendation in the guidelines around clarithromycin triple therapy is to restrict this regimen to geographical areas with known or expected low clarithromycin resistance rates (less than 15%) or proven high local eradication rates (greater than 85%), and only to be used in patients with no recent history of macrolide antibiotic exposure.[1,2,3] *H pylori* resistance data and eradication rates are difficult to obtain as culture and susceptibility testing is not typically performed (not done routinely anywhere in BC). It is also important to note that guidelines are often based on resistance data from the US and/or other geographical areas which may not be reflective of our local resistance rates.

Antimicrobial Stewardship Recommendations:

From an antimicrobial stewardship perspective, a triple therapy regimen is preferred due to easier compliance (less pills to take), as well as less potential for adverse effects and potential lower costs associated with only having to take three medications rather than four.

Due to reports of continued clinical success with clarithromycin triple therapy in NH, the NH Antimicrobial Stewardship program under the medical leadership of Dr. Abu Hamour endorses **clarithromycin triple therapy for 14 days** as a first line option for treatment of *H pylori* in NH patients without a contraindication (i.e. allergy, intolerance, recent macrolide antibiotic exposure, significant drug interactions).

If quadruple therapy is preferred, we recommend using the regimen of **proton pump inhibitor + bismuth + metronidazole + tetracycline** as this regimen has been shown to have good eradication rates in the literature while still limiting antibiotic exposure to just two agents.[1,2,3]

The importance of **completing the full 14 days of treatment** needs to be stressed to the patient even if symptoms resolve prior to treatment completion, and other important aspects of eradication such as smoking cessation should be encouraged as well.

You can access resources created and or provided by the AMS program by visiting the NH physicians' website or OurNH or by contacting the AMS program coordinator at 250-565-5956.

References:

1. Chey, W D et al. ACG Clinical Guideline: Treatment of *Helicobacter pylori* Infection. Am J Gastroenterol 2017; 112:212-238.

2. Fallone, C A et al. The Toronto Consensus for the Treatment of *Helicobacter pylori* Infection in Adults. Gastroenterology 2016; 151:51-69.

3. Clinical Resource, *Helicobacter pylori*: From Diagnosis to Eradication. Pharmacist's Letter/Prescriber's Letter. March 2017.

Submitted by: Ryan Doerksen, Interim Antimicrobial Stewardship Coordinator

Not just a prescription pad: A multimodal approach to chronic pain management

Interested in learning more about best practices in treatment of non-cancer pain?

WorkSafe BC is hosting accredited events throughout B.C. The learning objectives of this session are designed to help you:

- Incorporate the College's Standards for the safe prescribing of opioids into clinical practice
- Apply key principles for tapering of opioids and initiating substitution and exit strategies
- List risks and benefits of non-opioid treatment modalities for chronic non cancer pain and gain confidence in recommending them
- Identify community and regional resources and supports, including WorkSafeBC programs
- Develop confidence in engaging patients in the difficult conversations related to tapering opioids, exiting opioids, and/or refusing to prescribe opioids
- Screen and identify coexisting substance use disorder, mood disorder, and sleep disturbances.

Dates

Terrace– July 2019
Haida Gwaii– September 2019
Vernon-Salmon Arm-September 2019
Cranbrook-October 2019
Kelowna– October 2019
Vancouver-November 2019

Register online through https://events.eply.com/NotJustaPrescriptionPad