

Yazdan Mirzanejad, MD, DTM&H, FRCPC, FACP

Current approaches to infectious diseases, Part 2

“Quality means doing it right when no one is looking! As we express our gratitude, we must never forget that the highest appreciation is not to utter words, but to live by them.”
—John F. Kennedy



Dr Yazdan Mirzanejad

Dr Mirzanejad is a clinical professor in the Division of Infectious Diseases, University of British Columbia, and an infectious diseases consultant at the Surrey campus/Jim Pattison Outpatient Care and Surgery Centre.

This editorial has been peer reviewed.

Welcome to the second of a two-part series on infectious diseases in British Columbia (part 1 appeared in the May 2022 issue of the *BCMJ*). The first article in part 2 focuses on antimicrobial stewardship (Wong and colleagues). Antibiotics prevent millions of deaths each year and remain the primary treatment for potentially fatal bacterial infections. Yet, inappropriate prescription rates and overuse of antibiotics have led to antibiotic resistance, which has created a global health emergency that kills at least 700 000 people per year. If no action is taken, this rate is predicted to increase to 10 million deaths per year by 2050. This article provides a comprehensive review of common infectious syndromes and the most up-to-date recommendations on duration of antibiotic therapy.¹⁻⁴

The second article provides a comprehensive review of hepatitis B epidemiology and treatment of different stages of this hard-to-kill infection (Wong). In 2017, 4905 cases of hepatitis B virus infections were reported in Canada: 192 cases of acute infection (corresponding to a rate of 0.5 per 100 000 population), 4086 cases of chronic infection (11.4 per 100 000), and 627 cases of unspecified status. In 2017, acute hepatitis B rates were highest in males aged 30 to 39 years (1.19 per 100 000) and in females aged 25 to 29 (0.67 per 100 000). Rates of chronic hepatitis B in British Columbia (21.7 per 100 000 population) were above the national

average (11.4 per 100 000) and the average for Alberta (12.6 per 100 000), Yukon (12.6 per 100 000), and Ontario (12.5 per 100 000).⁵⁻⁹

The third article focuses on Lyme disease, particularly in BC (Morshed and Bowie). Lyme disease is considered the most common tick-borne disease in BC and North America. Unlike in eastern Canada, the rate of Lyme disease has remained low in BC. The infection is preventable by avoiding tick bites and removing attached ticks early. Early diagnosis and antibiotic treatment are important because Lyme disease can lead to serious complications if left untreated.

However, extreme caution needs to be applied in order to avoid overdiagnosing Lyme disease, and experts should be consulted when there is discordance between clinical and test results.¹⁰⁻¹⁴

The final article presents an analysis of travel-acquired infections and illnesses in British Columbians based on data from the GeoSentinel global surveillance network (Zapata-Dixon and colleagues). These data are used to alert public health and other relevant authorities during early signs of emerging infectious diseases in our province and country and in any other part of the world.¹⁵⁻¹⁸ ■

Welcome to the second of a two-part series on infectious diseases in British Columbia.

References

- Hassinger TE, Guidry CA, Rotstein OD, et al. Longer-duration antimicrobial therapy does not prevent treatment failure in high-risk patients with complicated intra-abdominal infections. *Surg Infect* 2017;18:659-663.



Inappropriate prescription rates and overuse of antibiotics have led to antibiotic resistance, which has created a global health emergency that kills at least 700 000 people per year.



- Montravers P, Tubach F, Lescot T, et al. Short-course antibiotic therapy for critically ill patients treated for postoperative intra-abdominal infection: The DUR-APOP randomised clinical trial. *Intensive Care Med* 2018;44:300-310.
- Stevens DL, Bisno AL, Chambers HF, et al. Practice guidelines for the diagnosis and management of skin and soft tissue infections: 2014 update by the Infectious Diseases Society of America. *Clin Infect Dis* 2014;59:e10-52.
- Jenkins TC, Sabel AL, Sarcone EE, et al. Skin and soft-tissue infections requiring hospitalization at an academic medical center: Opportunities for antimicrobial stewardship. *Clin Infect Dis* 2010;51:895-903.
- Alpert E, Isselbacher KJ, Schur PH. The pathogenesis of arthritis associated with viral hepatitis. Complement-component studies. *N Engl J Med* 1971;285:185-189.
- European Association for the Study of the Liver. EASL 2017 clinical practice guidelines on the management of hepatitis B virus infection. *J Hepatol* 2017;67:370-398.
- Terrault NA, Lok ASF, McMahon BJ, et al. Update on prevention, diagnosis, and treatment of chronic hepatitis B: AASLD 2018 hepatitis B guidance. *Hepatology* 2018;67:1560-1599.
- Sarin SK, Kumar M, Lau GK, et al. Asian-Pacific clinical practice guidelines on the management of hepatitis B: A 2015 update. *Hepato Int* 2016;10:1-98.
- Castillo E, Murphy K, van Schalkwyk J. No. 342–Hepatitis B and pregnancy. *J Obstet Gynaecol Can* 2017;39:181-190.
- Steere AC. Lyme borreliosis. In: Kasper D, Fauci A, Longo D, et al., editors. *Harrison's principles of internal medicine*. 19th ed. New York, NY: McGraw-Hill Education; 2015. pp. 1149-1153.
- Government of Canada. Lyme disease: Awareness resources. Accessed 3 May 2022. www.canada.ca/en/public-health/services/diseases/lyme-disease/lyme-disease-awareness-resources.html.
- British Columbia Centre for Disease Control. Reportable diseases data dashboard, 2018. Accessed 4 August 2020. www.bccdc.ca/health-professionals/data-reports/reportable-diseases-data-dashboard.
- Yeung C, Baranchuk A. Diagnosis and treatment of Lyme carditis: JACC review topic of the week. *J Am Coll Cardiol* 2019;73:717-726.
- Muehlenbachs A, Bollweg BC, Schulz TJ, et al. Cardiac tropism of *Borrelia burgdorferi*: An autopsy study of sudden cardiac death associated with Lyme carditis. *Am J Pathol* 2016;186:1195-1205.
- Hagmann SHF, Angelo KM, Huits R, et al. Epidemiological and clinical characteristics of international travelers with enteric fever and antibiotic resistance profiles of their isolates: A GeoSentinel analysis. *Antimicrob Agents Chemother* 2020;64:e01084-20.
- Stanaway JD, Reiner RC, Blacker BF, et al. The global burden of typhoid and paratyphoid fevers: A systematic analysis for the Global Burden of Disease Study 2017. *Lancet Infect Dis* 2019;19:369-381.
- Savage RD, Rosella LC, Crowcroft NS, et al. Direct medical costs of 3 reportable travel-related infections in Ontario, Canada, 2012–2014. *Emerg Infect Dis* 2019;25:1501-1510.
- World Health Organization. Typhoid fever surveillance and vaccine use—South-East Asia and Western Pacific regions, 2009–2013. *Wkly Epidemiol Rec* 2014;89:429-439.