Neurosyphilis

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1 Rates of neurosyphilis are likely to increase in Canada

Eight provinces and territories are currently experiencing syphilis outbreaks, with increases in incidence rates particularly in western Canada and Nunavut.[1,2] From 2009 to 2018, the number of infectious syphilis cases in Canada increased substantially, from 1584 to 6311 (4.7 to 17.0 per 100 000 population). Increased rates have been observed among women and people reporting heterosexual sex, with ongoing outbreaks among men who have sex with men. Cases of neurosyphilis will continue to occur, given this national resurgence of syphilis.[2]

2 It is a common myth that neurosyphilis develops only during late stages of syphilis

Neurosyphilis results from the bacteremic spread of the causative spirochete *Treponema pallidum* subsp. *pallidum* to the nervous system. Neurosyphilis can occur at any stage of syphilis. Possible manifestations include uveitis, retinitis, hearing loss, personality and behavioural changes, and aseptic meningitis; later-stage manifestations include clinical syndromes such as general paresis and tabes dorsalis.[2,3]

3 Lumbar puncture should be performed in patients with suspected neurosyphilis

Lumbar puncture is recommended in patients with neurologic or ocular signs or symptoms, previously treated patients with suboptimal serologic response as defined by Canadian guidelines, and HIV-seropositive patients with syphilis and rapid plasma reagin ≥ 1:32 dilutions or CD4 count < 350 cells/μL even in the absence of neurologic symptoms.[5]

4 Laboratory confirmation of neurosyphilis is usually made based on reactive serologic results and cerebrospinal fluid abnormalities

Pleocytosis and mildly elevated cerebrospinal fluid protein concentration are usually observed. A positive cerebrospinal fluid venereal disease research laboratory (VRDL) test result confirms neurosyphilis in a patient with neurologic symptoms, but a negative VRDL result does not rule out neurosyphilis.[3–5] Clinicians should consult their local infectious diseases or public health experts for guidance.

5 The recommended treatment for neurosyphilis is penicillin

There is no evidence of decreased susceptibility of *T. pallidum* to penicillin over the 75 years it has been used. Intravenous penicillin for 10–14 days is the preferred treatment for neurosyphilis. Patients with penicillin allergy that is likely immunoglobulin E mediated should undergo skin testing or desensitization.[5]

References

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