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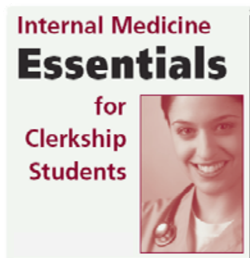
INTERNAL MEDICINE | Doctors for Adults



CDIM
CLERKSHIP DIRECTORS IN INTERNAL MEDICINE

Book Supplement

Differential Diagnosis of Meningitis

Disease	Notes
Bacterial meningitis	Fever, severe headache, stiff neck, photophobia, drowsiness or confusion, and nausea and vomiting and CSF polymorphonucleocyte predominance.
Enterovirus	Fever, severe headache, stiff neck, photophobia, drowsiness or confusion, and nausea and vomiting with a lymphocytic predominance on CSF evaluation. Most cases occur in the summer and early fall. Children are the most often affected. Most frequently identified cause of aseptic meningitis. Primarily echovirus and coxsackievirus. PCR for enterovirus is available.
Arboviruses	Most often present as encephalitis but can present as meningitis or meningoencephalitis. Seen in patients living or traveling to areas where there is arboviral activity or epidemic. St. Louis encephalitis virus, California encephalitis virus, and West Nile virus are the most common. They occur most frequently in warmer months and when contact with mosquito vectors is most likely.
Herpes simplex virus	HSV-1 most often presents as temporal lobe encephalitis and HSV-2 causes aseptic meningitis. HSV meningitis often associated with primary genital infection. HSV accounts for approximately 0.5%-3% of all cases of aseptic meningitis. HSV meningitis often is self-limiting and does not require antiviral treatment. HSV encephalitis does require antiviral treatment.
HIV disease	HIV-associated aseptic meningitis generally follows a mononucleosis-like syndrome. Most commonly seen in acute HIV infection. Viral load should be obtained to exclude acute HIV. Always a consideration in young adults and patients with high-risk behaviors.
Tuberculous meningitis	Headache, nausea, vomiting, fever, mental status changes lasting more than 2 weeks. CSF abnormalities are nonspecific and generally show normal to slightly decreased glucose, elevated protein, and moderate pleocytosis with variable differential. CSF culture for *M. tuberculosis* is low yield and may take several weeks to become positive. A negative TB PCR result on the CSF does not exclude the diagnosis of tuberculous meningitis.
Borrelia burgdorferi (Lyme disease)	Associated with a rash (erythema migrans) early in the disease followed by aseptic meningitis approximately 4 weeks after the initial signs of disease. Vector tick is endemic to the northeastern U.S. and Great Lakes area. Occurs most frequently in the summer and autumn seasons.
Cryptococcal meningitis	Subacute or chronic presentation. 50% of cases occur in patients who are HIV negative. CSF pleocytosis of 40-400 cells/mm3 with lymphocyte predominance and slightly low glucose is typical. India ink stain of the CSF has limited sensitivity. CSF is positive for cryptococcal polysaccharide antigen in 90% of patients.

CNS = central nervous system; CSF = cerebrospinal fluid; HIV = human immunodeficiency virus; HSV = herpes simplex virus; HSV-1 = oral herpes simplex virus; HSV-2 = genital herpes simplex virus; PCR = polymerase chain reaction; TB = tuberculosis.

Table adapted from *Physicians' Information and Education Resource* (PIER) Aseptic (Viral) Meningitis module

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