Overview of Regional Differences

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Demographic information is important for radiologists to narrow the spectrum of the differential diagnosis. As an introduction to following lectures that review imaging features of infectious and inflammatory diseases of the central nervous system, an overview of epidemiology of such disorders focusing on differences among regions as well as those in causative agents is presented categorizing major disease groups as follows:

1. Bacterial meningitis: In developed countries, S. pneumoniae, Group B streptococcus, and N. meningitidis, are frequent. Epidemics of meningococcal meningitis are often found in subsaharan Africa (meningitis belt). Bacterial meningitis is also popular in Brazil.

2. Brain abscess: Although found worldwide, brain abscess secondary to otitis media is frequent in developing countries, while that due to paranasal sinusitis is relatively frequent in developed countries.

3. Viral meningitis: Nonpolio enteroviruses are the most common. Mumps, polio, and lymphocytic choriomeningitis viruses are now rare in developed countries.

4. Encephalitis and myelitis: Herpes simplex virus encephalitis is the most common worldwide. Some viral encephalitides show characteristic regional predominance as follows: Venezuelan equine encephalitis (South America), West Nile virus (Africa as well as some parts of the U.S. and Europe), and Japanese encephalitis (Asia). Polio remains a major cause of debilitating myelitis in some African countries.

5. HIV/AIDS-related infection: The incidence of HIV infection and AIDS is still increasing in subsaharan African countries as well as in China, India, and Indonesia.

6. Fungal disease: Cryptococcosis and aspergillosis are found internationally. Endemics of histoplasmosis are noted in Ohio River valley areas of the U.S. and Latin America, while those of coccidioidomycosis are noted in desert southwestern U.S., northern Mexico, and Central America. Blastomycosis is distributed worldwide, but is endemic in the Mississippi river and Ohio river basins and around the Great Lakes in the U.S.

7. Parasitic disease: Toxoplasmosis occurs worldwide, while cerebral malaria is endemic in subsaharan African countries, India, and Southeast Asia. Neurocysticercosis is often found in Central America and Asia.