

## Treatment of Neuro-infectious Diseases

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### Opinion

Neuro-infectious diseases are infections that affect areas of the brain. At Sinai Health System, we provide unparalleled look a er a variety of neuro-infectious diseases including neuro-AIDS, neuro-HIV, neurosyphilis, and meningitis. Our highly skilled neurologists and specially trained staff are equipped with years of experiences in treating these challenging conditions.

The Sinai Neurosis team is committed to developing new and effective treatments for the neurological complications of HIV infection. With today's widespread use of combination antiretroviral therapy, our work has turned toward the neurologic problems faced by people living with chronic HIV, like peripheral neuropathy and chronic pain. We have several ongoing clinical research protocols, and our patients can participate in clinical trials [1].

We work closely with the Manhattan HIV Brain Bank, which focuses on the neurologic, neuropsychological, psychiatric, and neuropathology manifestations of HIV infection and HIV-associated issues. His UCLA Neuro-infectious Diseases Program provides assessments and second opinions for patients with chronic infectious diseases that affect the central and peripheral nervous system, as well as persons with meningitis of unknown etiology and post-viral neurologic diseases [2].

Our special emphasis is on the neurologic complications of HIV/AIDS, HTLV-I /II, hepatitis C virus, and JC virus (progressive multifocal leukoencephalopathy). We don't provide medical care for infectious diseases but will work together with your primary physician or ID specialist to manage your care.

The Neuro-ID service conducts clinical studies of HIV-related cognitive impairment, painful HIV peripheral neuropathy, and opportunistic infections of the brain. Some of these studies are performed together with the UCLA AIDS Clinical Trials Group, the National Neurologic AIDS Consortium, or pharmaceutical companies.

In addition, we conduct or participate in studies on the causes and explanation of HIV-related diseases and therefore the system nervous.

These studies include: the National Neurological AIDS Bank (NNAB), a longitudinal study of persons with advanced AIDS and other serious diseases. Volunteers are asked to possess neurological examinations during their life and to donate their brains and other organs to research within the event of their death. The NNAB collaborates with scientists everywhere the planet that is studying neurological diseases, and supplies them with valuable samples [3].

Most antimicrobials have poor CNS penetration and need prolonged treatment. The drugs cannot access the abscess cavity, and surgical intervention is required. Except for some herpes viruses and therefore the human immunodeficiency virus, there are not any therapies available for other CNS viral infections. yet the incidences of arboviral and enteroviral encephalitis and progressive multifocal leukoencephalopathy are increasing. In endemic regions, rabies, cerebral malaria, cysticercosis, trypanosomiasis, and schistosomiasis carry an enormous burden, but treatment is insufficient.

Many human pathogens do not infect rodents. The lack of animal models for CNS infections means that human studies are conducted following *in vitro* efficacy studies. This enhances the danger of failure and of unexpected adverse effects. For example, a study<sup>10</sup> using mequinine hydrochloride for treatment of progressive multifocal leukoencephalopathy was stopped owing to a lack of efficacy, despite promising *in vitro* studies. Although humanized rodent models might be developed, the method is technically challenging, and there are ethical limitations to introducing human cells into the rodent brain.

The challenges in conducting clinical trials for CNS infections include the seasonal nature of some infections, the necessity for classy laboratory diagnostic techniques, and therefore the lack of neuroimaging in regions where outbreaks occur. The acute nature of the illness necessitates quick action. The distinct advantages of the event of medicine for infections are the power to watch the organism and therefore the possibility of a cure. Hence, clinical trials might be conducted on small sample sizes over short periods [4, 5].

### References

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