



DEMENTIA

and CENTRAL NERVOUS SYSTEM PROBLEMS

WHAT ARE NERVOUS SYSTEM PROBLEMS?

The nervous system has two parts. The brain and spinal cord are called the central nervous system. The nerves and muscles are called the peripheral nervous system. (Peripheral means around the outside). People with HIV disease can have several nervous system problems. A common problem is peripheral neuropathy. This can cause nerve and muscle pain, especially in the feet, legs, and hands. See Fact Sheet 553 for more information on peripheral neuropathy. Central nervous system problems include depression and problems with sleeping, balance, walking, thinking and memory.

At first, all these problems were called "AIDS Dementia Complex". Then scientists learned more about HIV disease and its effects on the nervous system. They realized that there is a wide range of nervous system troubles. AIDS Dementia now means ongoing major problems with thinking, memory, and usually also with controlling the legs and arms.

Before combination antiviral therapy was available, about 20% of people with AIDS developed dementia. There are many fewer cases now, but we don't know the exact rate.

HOW ARE NEUROLOGIC PROBLEMS DIAGNOSED?

It can be difficult to know what's causing neurologic problems. They can be caused by vitamin deficiencies, opportunistic infections, or by antiviral medications. Others are caused when HIV infects the brain or spinal cord.

Mental problems usually don't show up until the late stages of HIV disease. If someone with a high T-cell count develops a neurologic problem, their doctor will look for other causes. These

might include depression or the aging process.

You should tell your doctor if you have any signs of HIV-related neurologic problems. These include:

- Balance problems
- Vision problems
- Difficulty remembering
- Difficulty concentrating or completing a task
- Getting lost in places that you know
- Forgetting telephone numbers that you use a lot
- Having trouble with simple math like making change at the store

Your doctor might use some paper and pencil tests to learn more about what's causing a mental slowdown.

Some neurologic problems require urgent medical attention. If you have serious headaches, especially with a fever, stiff neck, vomiting, or vision problems, you should see your doctor immediately.

HOW ARE NERVE PROBLEMS TREATED?

Central nervous system problems can be caused by medications, by swelling, or by direct HIV infection of the brain and spinal cord.

If nervous system problems are caused by medications, they usually go away if you stop taking the drugs.

Problems caused by swelling, which include toxoplasmosis (See Fact Sheet 517), can be treated with antibiotics.

HIV infection of the central nervous system has to be treated with antiviral drugs. Unfortunately, the "blood brain barrier" keeps many drugs out of the central nervous system. It's a tight network of blood vessels that protects the brain and spinal cord from most germs or poisons in your blood.

However, several anti-HIV drugs get through the blood-brain barrier at fairly high levels:

- AZT (Fact Sheet 420)
- ddI (Fact Sheet 422)
- d4T (Fact Sheet 423)
- Nevirapine (Fact Sheet 431)
- Efavirenz (Fact Sheet 432)
- Indinavir (Fact Sheet 441)

A special factor for people with central nervous system problems is that they may need extra help remembering to take their medications.

Caring for someone with dementia is very difficult. Caregivers need to take care of themselves, too, to avoid burnout and depression.

Some other medications are being studied for mental problems. These include memantine and lexipafant. Partly because of the small number of people with HIV-related mental problems, these drugs are being studied in people with other diseases.

THE BOTTOM LINE

HIV disease can cause a range of nervous system problems, from forgetfulness and balance problems to serious dementia. These problems usually don't show up until the later stages of HIV disease.

The new combination therapies that fight HIV seem to help protect the central nervous system against damage from the virus.

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