Onchocerciasis, River Blindness

Onchocerciasis is an infection. It is caused by the parasite Onchocerca volvulus (worm). It is spread by the bite of an infected blackfly. This infection is also called River Blindness. Transmission is most intense in remote African agricultural villages. These would be located near rapidly flowing streams. Persons with heavy infections will often have one or more of the three conditions: dermatitis, eye lesions, and/or subcutaneous nodules. Skin biopsies will identify the parasite under a microscope. This infection is commonly treated with an oral medicine called Ivermectin.

The World Health Organization (WHO) estimates the global number of infected people is 17.7 million. This infection is transmitted in:

- Mexico.
- Guatemala.
- Ecuador.
- Colombia.
- Venezuela.
- Brazil.
- Yemen.
- Thirty countries of Africa.

99% of infected persons are in Africa. This infection is rare in casual travelers. It is transmitted in rural areas. Unlike malaria, contracting this disease requires more than one infectious bite. The risk of infection is greater in adventure travelers, missionaries, and Peace Corps volunteers. These travelers are likely to have intense and prolonged exposure to black fly bites. Given the low rate of transmission in the Americas, it is very unlikely that any travelers in this region (even missionaries and Peace Corps volunteers) would ever get infected.

CAUSES

The disease spreads from person to person by the bite of a black fly. When a black fly bites a person who has onchocerciasis, microscopic worms (called microfilariae) infect the black fly. The microfilariae develop over 2 weeks. At this stage, they are infectious to humans. An infectious black fly will typically inject one or two larvae to transmit the disease to another person. The worms can only increase their numbers in the human by first mating and then cycling their microfilariae through the black fly. The number of worms in a person is related to the number of infectious bites sustained by an individual. Blindness almost always occurs in persons with intense infection.

SYMPTOMS

Infected persons may not have symptoms. Those with symptoms will usually have one or more of these problems:

- Skin rash.
- Eye lesions.
- Bumps under (*subcutaneous*) the skin.

Lesions in the eye are the most serious symptom. They can lead to blindness.

The normal incubation period ranges from 9 to 24 months after the bite of an infected blackfly. Each female worm can reproduce millions of microfilariae during her lifetime. Worms can live for 10-15 years.

DIAGNOSIS

If you think you might have this disease, see your caregiver. He/she may order skin biopsies ('snips'). Examination of skin snips does not always show the parasites. Serologic testing for antibodies is available. But a positive result does not necessarily indicate an active case of this disease.

TREATMENT

Ivermectin is administered as an oral dose of 150 micrograms per kilogram (maximum 12 mg) every 6-12 months. The drug should probably not be given to pregnant women or children under 5 years. Ivermectin does not kill the adult parasites. But it reduces the numbers of microfilariae in skin. So the disease does not get

worse.

PREVENTION

Black flies bite during the day. The best prevention is to avoid infective bites of the black fly.

- Use insecticides such as DEET.
- Wear long sleeve shirts and pants.

There is neither a vaccine nor recommended drugs available to prevent this disease.

This fact sheet is for information only. It is not meant to be used for self-diagnosis or as a substitute for consultation with a caregiver. If you have any questions about the disease described above or think that you may have a parasitic infection, consult a caregiver.

Information courtesy of the CDC.

Document Released: 11/14/2005 Document Re-Released: 03/14/2011
ExitCare® Patient Information ©2011 ExitCare, LLC.