

Onchocerciasis - Disease Transmission, Control Measures

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Disease Transmission

Onchocerciasis is common in areas where specific types of blackflies (genus simullum) breed. Usually the best breeding grounds are fast-flowing rivers and streams. The blackfly spreads the disease in the following manner. The blackfly bites a person who is infected with onchocerciasis. The larvae of the parasite are taken from the skin of the person and pass with the tissue juices into the blackfly. In the fly, the larvae become infective in about six to ten days. When the fly bites again the larvae pass from the fly into the person. Lumps form under the skin. These nodules contain adult round worms which produce large numbers of larvae that live in the skin waiting to be sucked up by a blackfly.

Of the millions of larvae, only a few are taken in by blackflies. The rest wander through the host's tissues until they die in the human body. The body tries to fight the effects of the dead larvae by building scar tissue around them. These scars form in the body. Many larvae die in the lens and other parts of the eye. Eventually, the lens becomes so full of scar tissue that the person becomes blind. The nodules containing the adult worms are not always easy to detect because they may be deep in the body. Generally the presence of nodules, patches on the skin and itchiness are symptoms of onchocerciasis.

Control Measures

Control of the disease is focused on the control of the blackfly population through environmental and chemical means. Treatment is not very effective since the disease is sometimes difficult to detect. However, early treatment that kills the adult worms will help prevent blindness. The following control measures are recommended for fighting the spread of onchocerciasis. Environmental Control. Environmental control of onchocerciasis involves eliminating the breeding sites of the blackflies. However, it is very difficult to control the disease just by environmental means. Some measures that are useful are also expensive and will be beyond the means of most rural people. Environmental measures that can be used to control onchocerciasis should be included in development projects.

Treatment and Education

Where onchocerciasis is suspected, a medical skin test is necessary to determine its presence. Also, the disease can be detected with an eye examination.

When the nodules appear on the body, they can be removed by surgery. Early removal lowers the number of worms in the body. However, when the nodules are inside the body and not easily detected, this measure is not useful. Removal of nodules from all people with the disease would be very time-consuming and virtually impossible.

Another possibility is to use drugs to treat people with the disease. There are drugs which kill the larval parasites in the body and drugs that kill the adult worm. No drug does both. The problem with drug use is:

- Drugs have severe side effects.
- Drug treatment can only stop the symptoms and prevent further damage.
- Drug treatment is expensive and not practical over large areas.

To control river blindness, it is very important to eliminate breeding places. People should be taught about the disease and how it is spread. Once an awareness of the disease is created, people will be more interested in cooperating in blackfly control programs. Community members should participate in and take responsibility for spraying programs and brush clearing. Instruct people in the importance of using netting when sleeping outdoors, especially during the daytime when the flies bite. Above all, help people to recognize the symptoms of the disease so that they can get medical help quickly.

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