OneWorld Health, a drug development affiliate of PATH

Kala-Azar

Kala-Azar (visceral leishmaniasis, or VL) is a potentially fatal infectious disease that is transmitted through the bite of a sandfly and affects the visceral organs, causing chronic fever, weight loss, and anemia. VL is endemic in 65 countries, primarily in the developing world, and the population at risk is estimated at 200 million. If left untreated, VL is nearly always fatal. Officially, 50,000 to 60,000 deaths result from VL each year. Previously available therapies cost from US$300 to $2,000, and can be toxic or ineffective.

Kala-Azar symptoms

Kala-Azar is the severest form among the leishmaniases. Symptoms of the disease include continuous or sporadic fever, weight loss and loss of appetite, enlargement of the spleen and liver, skin damage and possible hair loss, and anemia. The parasites also invade the bone marrow, causing the immune system to weaken, which increases vulnerability to infection and disease. Without treatment, this disease is virtually always fatal. The risk for co-infection with HIV is also rising, especially in East Africa, and it is a major concern for the World Health Organization (WHO).

Geographic distribution and prevalence

Kala-Azar typically strikes people in rural villages, often in the poorest regions and among the people least able to afford treatment. Of the estimated 500,000 new cases occurring annually, 90 percent occur in six countries: Bangladesh, Brazil, Ethiopia, India, Nepal, and Sudan. VL is frequently unrecognized and undiagnosed, especially when access to doctors and drugs is poor. Most patients seek treatment in the private sector and are not adequately monitored for treatment effectiveness and compliance to treatment.

OneWorld Health responds

OneWorld Health (OWH) developed the Paromomycin Intramuscular Injection (PMIM) as a safe, effective, and affordable treatment for Kala-Azar. A full course of treatment costs less than $20. PMIM was designated by the WHO for inclusion on its Model List for Essential Medicines and has been approved for Essential Drug Lists of Bangladesh, Ethiopia, India, Nepal, Sudan, and Uganda. PMIM is currently registered in India, Nepal, and Uganda. In 2011, OWH completed a major phase 4 pharmacovigilance study of PMIM for the treatment of VL in India (Bihar State) and conducted field research to better understand the impact of the disease and treatment on rural communities. In October 2011, together with the Drugs for Neglected Diseases *initiative* and Special Programme for Research Training in Tropical Diseases, OWH announced the launch of a major consortium project aimed at establishing and implementing new treatment modalities as successful tools towards VL elimination in South Asia.

Additional Resources

Desjeux, P. Leishmaniasis: current situation and new perspectives. *Comparative Immunology, Microbiology and Infectious Diseases*. 2004;27(5):305–318.
WHO Leishmaniasis page. Available at: www.who.int/topics/leishmaniasis/en/. Accessed April 9, 2012.
WHO Regional Office for South-East Asia page. Available at: www.searo.who.int/. Accessed April 9, 2012.
Drugs for Neglected Diseases *initiative* site. VL Asia Press Room page. Available at: http://dndi.org/component/content/article/1001.html. Accessed April 9, 2012.

How do people get infected?

Photo: OneWorld Health

The main method of transmission is through the bite of infected female phlebotomine sandflies.

People might not realize that sandflies are present because they do not make noise when they fly; they are small (about one-third the size of typical mosquitoes); and their bites might not be noticed (the bites may be painless).

Sandflies are usually most active in twilight, evening, and night-time hours from dusk to dawn. Although sandflies are less active during the hottest time of the day, they may bite if they are disturbed.

Since the symptoms can resemble malaria symptoms, VL infections are frequently initially misdiagnosed as malaria, delaying onset of effective VL treatment and allowing the disease to advance and the patient to get more sick.

Photo: Jonathan Torgovnik©

April 2012

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