

Vaccine against black fever being tested

April 23 2012, By Sandi Doughton

After more than two decades of research, scientists are testing the first vaccine against the deadliest form of a disease that infects more than 12 million people worldwide.

Called [leishmaniasis](#), or black fever, the [parasitic infection](#) is transmitted by the bite of no-see-um-sized sand flies, whose range appears to be expanding - including in the United States. But if the vaccine proves effective, it will be most valuable in India, [Bangladesh](#), Brazil and the handful of other countries where the virulent version is most prevalent.

Three dozen volunteers in Tacoma, Wash., are rolling up their sleeves for the first shots, as part of a clinical trial to ensure that the vaccine is safe. Results so far are promising, but it will be months before the final data are in, said Dr. Franco Piazza, medical director for the Infectious Disease Research Institute or IDRI. Researchers at the Seattle nonprofit are seeking vaccines and cures for several neglected diseases, but black fever is the one they've worked on longest.

The vaccine's safety will also be tested in India, starting late this year. If it passes those hurdles, the drug will then get a larger-scale test in India to see how well it protects people from the disease.

The work is funded by the Bill & Melinda Gates Foundation.

"It's early days," cautioned IDRI founder Dr. Steve Reed, who for many years waged a lonely battle against a disease few Americans have ever heard of - or can pronounce. (It's leish-muh-nye-uh-sis.) Reed's quest

got a huge boost when the Gates Foundation took up the cause, funneling \$54 million to IDRI's leishmaniasis research.

Now, if everything goes well, Reed is optimistic the new vaccine could be ready for market in about five years.

The disease comes in many forms, one of which attacks the skin, causing painful lesions that are slow to heal and leave disfiguring scars. "People get so desperate they want to kill themselves," said Reed, who spent five years working with patients in [Brazil](#).

American troops serving in Iraq and Afghanistan have been plagued by what they call "Baghdad Boil." A few returning veterans sought treatment for the sores at the Veterans Affairs Puget Sound Health Care System, said Dr. Richard Miller, chief of infectious disease.

Reed and his colleagues developed an earlier vaccine to protect against the skin infection, which is rarely fatal.

But the Gates Foundation decided to focus its funding on the disease's most dangerous manifestation, said Dr. Jan Agosti, foundation program officer. In the form called visceral leishmaniasis, which the new IDRI vaccine is designed to fight, parasites attack the liver, spleen and bone marrow.

Sometimes called the parasitic version of AIDS, the infection is aggravated by the bug's ability to hide inside the white blood cells that would normally engulf the invaders. Victims suffer from anemia, fever and a weakened immune system that leaves them vulnerable to other infections. Pigments from ruptured blood cells can turn the skin dark, hence the name "black fever."

The World Health Organization estimates nearly half a million people

contract black fever every year, and more than 10 percent will die.

People with chronic infections are unable to work or care for their families. "For every death you see, there are at least 10 people who have it," Reed said. "There's a lot of suffering that's not reflected in the numbers."

Treatments exist, but most have serious side effects or aren't accessible to the world's poor. Drug resistance is also rising.

IDRI partnered with an Indian pharmaceutical company to manufacture the vaccine for [clinical trials](#) in Asia and for commercial distribution. India has more cases than any other country, and it's important to keep the cost of the [vaccine](#) low so it can reach the poorest people who need it most, Agosti said.

Leishmaniasis is rare in the United States. Until recently, the only contracted cases here were in south-central Texas. Then infections started popping up in the northern part of the state.

Globally, the World Health Organization says the disease is spreading as a result of deforestation, irrigation and dam building that expand habitat for sand flies. Climate change may also be a factor. If warming continues, one analysis warns, sand flies in the United States could expand their range as far north as the Canadian border.

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