

New drug resistance found in river blindness

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A 20-year effort to control the spread of onchocerciasis, or river blindness, in African communities is threatened by the development of drug resistance in the parasite that causes the disease, a study by McGill University researchers has found.

“We’ve found the first evidence of resistance, where the adult parasites continue to reproduce and transmit the disease, and in some communities it seems to be getting worse,” said Dr. Roger Prichard, James McGill Professor in the University’s Institute of Parasitology, whose findings appear in the June 16 edition of *The Lancet*.

River blindness, which is the second-leading infectious cause of blindness worldwide after trachoma, is caused by the filarial nematode parasite, a worm transmitted by black fly bite. It leads to visual impairment, blindness, and, in some cases, pathological changes in the skin. Adult worms can survive as long as 10 to 15 years in a human host, releasing millions of tiny worms (microfilariae) each year. An estimated 37 million people are infected worldwide, primarily in Sub-Saharan Africa but also in parts of Central and South America and, to a lesser extent, the Middle East.

“This finding has important implications for this disease re-emerging and becoming a serious scourge,” said Dr. Prichard, warning that health organizations need to begin closely monitoring for the spread of drug resistance and new drugs need to be developed.

Dr. Prichard and his colleagues studied 2,501 infected people from 20

communities in Ghana, West Africa. Of those communities, 19 had been receiving annual doses of ivermectin, the only widely available drug used to treat onchocerciasis.

Although ivermectin wiped out the microfilarial stage of the parasite in 99 per cent of those treated, four communities experienced significant repopulation and in two communities, the prevalence of the parasite had doubled between 2000 and 2005, the researchers found. Two McGill graduate students, Mike Y Osei-Atweneboana and Jeff K.L. Eng, conducted the bulk of the research in collaboration with research institutions and health authorities in Ghana.

If left unchecked, Dr. Prichard warned, drug resistance could spread to communities where ivermectin treatment has successfully controlled the disease since the drug was introduced in the late 1980s, when, in an unprecedented move, Merck announced that it would provide the drug at no cost for as long as necessary.

Source: McGill University

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