

Study finds multiple neglected tropical diseases effectively treated with drugs

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The neglected tropical diseases are a group of 13 infectious diseases, including elephantiasis, hookworm, African sleeping sickness and trachoma, which affect more than 1 billion people worldwide, most of whom live in extreme poverty. In a study published in the most recent *Journal of the American Medical Association*, Madhuri Reddy, M.D., M.Sc., a geriatrician at Hebrew SeniorLife in Boston, says that treating two or more of them simultaneously for only pennies per dose can facilitate treatment of these diseases.

“At least two of the most prevalent neglected tropical diseases can be potentially treated simultaneously with existing oral drug treatments,” writes Dr. Reddy, “facilitating effective and efficient treatment. Increasing awareness about neglected tropical diseases, their global impact, and the availability of oral drug treatments is an essential step in controlling these diseases.”

While inexpensive oral medications are available to treat these conditions, the drugs are often not accessible to the people affected by them, most of them living without access to health care in remote areas on less than \$2 per day. These diseases are perpetuated by unsafe water, poor sanitation, and substandard housing conditions. Infection with neglected tropical diseases can lead to lifelong disabilities, disfigurement and, if left untreated, early death. Together, they contribute to nearly 500,000 deaths per year, a number almost as high as HIV/AIDS, tuberculosis or malaria.

“Despite the huge impact of neglected tropical diseases worldwide,” says Dr. Reddy, “the ability to treat them is largely unknown in the medical community, and there is little public awareness of and response to this problem.”

Dr. Reddy and her colleagues reviewed 29 randomized control trials of oral drug treatments for neglected tropical diseases. They found that existing oral medications can be used to treat two or more of the most prevalent neglected tropical diseases simultaneously and that four of the seven most prevalent neglected tropical diseases can be treated with a single oral drug combination. In most cases, these drugs cost less than a nickel per dose.

A number of initiatives are underway to reduce the prevalence of these diseases. The U.S. government has committed \$15 million to support neglected tropical disease control, and the Bill & Melinda Gates Foundation donated \$46.7 million in grants toward developing methods of eliminating these diseases. Pharmaceutical companies have donated drugs valued at more than \$1 billion toward this integrated treatment approach.

Researchers estimate that “approximately 500 million people at risk for neglected tropical diseases in African could be treated with four effective drug therapies at an annual cost of less than US \$0.40 per person,” the researchers write in JAMA.

The neglected tropical diseases reviewed include roundworm and whipworm, which impair growth and cognitive function and affects nearly 2 billion people; hookworm, which causes malnutrition and anemia; snail fever, which affect growth and school performance and cause renal failure; elephantiasis, which disfigures limbs and genitalia; trachoma, the leading cause of preventable blindness in the world; river blindness, which causes eye lesions and dermatitis; black fever, the

second leading parasitic killer; Chagas disease, which causes irreversible heart, esophagus and colon damage and affects mostly children; and leprosy, which affects the nerves, skin, limbs and eyes.

Dr. Reddy and her colleagues say that drug-based alone control cannot reduce the prevalence of neglected tropical diseases without “fundamental public health measures” such as access to clean water, adequate sanitation, and access to health-care services. Hebrew SeniorLife is committed to maximizing the quality of life of seniors through an integrated system of housing, health care, research and teaching programs.

Source: Hebrew SeniorLife Institute for Aging Research

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