New study finds that malaria vaccine protects adults for up to a year

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Credit: CDC

Malaria infects hundreds of millions of people every year, and kills more than half a million, most of them under the age of 5 years. There is no vaccine.

But now, a new study by researchers at the University of Maryland School of Medicine has found that an experimental malaria vaccine

protected adults from infection for more than a year.

The study, a Phase 1 trial, was published in the journal *Nature Medicine*.

"These results are really important," said Kirsten E. Lyke, a researcher at the University of Maryland School of Medicine. "Malaria has such a devastating effect on children, especially in Africa. This vaccine has the potential to help travelers, military personnel and children in malaria-endemic areas."

Known as PfSPZ Vaccine, the treatment was developed and produced by Sanaria Inc., of Rockville, Maryland, with support from the National Institute of Allergy and Infectious Diseases (NIAID), part of the National Institutes of Health.

Lyke and her colleagues, working with NIAID scientists, conducted a clinical evaluation of the vaccine, which involved exposing a small number of willing healthy adults to the malaria-causing parasite Plasmodium falciparum (P. falciparum) in a controlled setting.

The parasite is transmitted to humans via the bite of infected mosquitos. The PfSPZ Vaccine consists of live, but weakened, P. falciparum, specifically, the early developmental form of the parasite.

Previous research had shown that the vaccine worked for three weeks after immunization. This study analyzed its longer term effects. The trial enrolled 101 healthy adults aged 18 to 45 years, who had never had malaria. Of these, 59 participants received the vaccine, while 32 participants were not vaccinated. Vaccine recipients were divided into groups to assess various variables, including dose, number of immunizations, and route of administration.

Participants were exposed to the bites of mosquitoes carrying the same

P. falciparum strain from which the vaccine was derived. Scientists then took blood samples from participants to measure parasite levels for evidence of protection. IV administration appears to provide better protection than intramuscular injection, both in the short and long term. Overall, the study found that the vaccine provided protection for up to a year in more than half (55 percent) of subjects. In those people, it appeared to provide sterile protection, meaning the subjects not only didn't get malaria, but also could not further transmit malaria.

Long-term, reliable protection is important for people who are vaccinated, but not actually exposed to malaria for months, such as travelers or military personnel. Durable protection is also important for mass vaccination campaigns aimed at interrupting transmission in places where the disease is widespread.

More information: Protection against malaria at 1 year and immune correlates following PfSPZ vaccination, *Nature Medicine*, DOI: 10.1038/nm.4110

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