

EDITORIALS

A VACCINE FOR MALARIA? WHERE DO WE STAND

Malaria is a mosquito borne infectious disease of humans and other animals caused by parasitic protozoans of the genus plasmodium. It has afflicted people for much of human history, and has affected settlement patterns.¹ Its scourge is still rampant, causing great morbidity and mortality across much of Sub-Saharan Africa, Asia and the Americas. The World Health Organization estimates that in 2010, there were 219 million documented cases of malaria, with the disease killing between 660,000 and 1.2million people², many of whom were children in Africa. The reflection of these staggering statistics, with its effect on the economic development of the countries is heart breaking.

Thus , the search for an ideal treatment and prevention for the disease is on. This search dates back hundreds of years with observational discovery of a selective protective advantage to some blood disorders such as sickle cell disease, thalassaemias, glucose-6-phosphate dehydrogenase deficiency, elliptocytosis, ovalocytosis, glyophorin C and the duffy antigen.^{3,4} The builders of the pyramids were documented by the historian, Herodotus to have been given large amounts of garlic⁵ to protect them against malaria. Bed nets were also said to have been used in ancient Egypt by some pharaohs⁶. The progressive history of ancient Chinese⁷ and European⁸ remedies, the discovery of quinine by Agostiono Salumbrino⁹ in Lima, Peru and its development to the present use of artemisinin¹⁰ based therapy is well documented.

Despite all these development, the death toll seems to rise due to problems in drug availability, distribution, sub standard drugs and problems of development of drug resistance. Thus the need for a permanent preventive vaccine cannot be over emphasized.

The difficulties in developing a vaccine for malaria stems from the following:^{11,12,13,14}

- The sheer complexity of the parasite and its life cycle
- The extensive antigenic variation of the parasite
- Poor understanding of the interaction between plasmodium falciparum and the human immune system

There is also the problem of inadequate funding of research in this area, especially in comparison to the amount being spent in a still-elusive HIV/AIDS vaccine¹⁵. The bright spot is that P. falciparum infection induces clinical immunity unlike HIV/AIDS¹⁶. Also a lot of work is being down on developing vaccines to combat the different life cycle stages of the disease, and also to get combined forms to develop the one universal vaccine for prevention¹⁶.

The closest to success so far is the RTS,S vaccine, which is said to have protected 30 to 50% malaria-naïve adults in a series of phase II clinical trials¹⁶. Efforts are being made to fully assess the efficacy of this vaccine, however concerns still abound. The World Health Organization recently made an indication of hoping to recommend the vaccine for prequalification stage from as early as 2015 and for full licensing for use by 2030¹⁷. But the question still remains, if clinical trials will show the vaccine, efficacious and effective enough to be used on a commercial scale. Can we wait another 15 years for a final solution to the deaths that occur every day? The future will decide.

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The Editor

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