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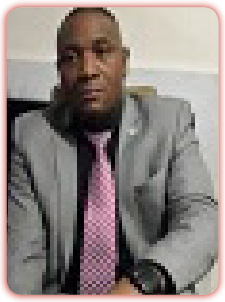

Development of a new approach to treat children and pregnant women infected with falciparum malaria using effective anti-malarial drugs and supplements which stimulate the immune system

Despite the availability of adequate preventatives, falciparum malaria is still responsible for the deaths of hundreds of thousands of people yearly. The majority of these victims are young children and pregnant women. The key question is why does this occur? The vulnerability of these populations is likely caused by a deficiency in nutrition affecting the host immune system. Scientists have demonstrated that falciparum malaria patients (FMP) have a biochemical deficiency caused by insufficient amounts of the amino acid L-arginine (L-arg). L-arg is substrate for the enzyme- nitric oxide synthase 2 (NOS2) which generates large amounts of nitric oxide (NO). NO reacts with a form of oxygen which generates a substance which can kill the malaria parasite. The parasite protects itself by producing and releasing L-arginase which degrades the L-arginine of the host thus preventing the NO-based toxicity. Children need L-arginine as an essential amino acid to be healthy so the parasite depletes this amino acid and prevents a needed substance from being used by their body and it also prevents the production of this key ingredient to fight the parasite. This same scenario likely occurs to the unborn child in pregnant women. In addition, pregnancy produces a somewhat immunosuppressed state causing increased morbidity and mortality. We plan to study the combination of artemether and lumefantrine with several types of sustained release nitric oxide nutritional supplements compared to drugs alone in these two populations.

Biography

Knox Van Dyke has completed his PhD in Biochemistry in the Nobel Prize Department of Dr. Edward A Doisy at Saint Louis University in 1966. He began to study about malaria at West Virginia University Medical School and developed the first high throughput screening system for anti-malarial drugs identifying mefloquine and halofantrine which were commercially developed. He and Associate Professor Zuguang Ye recognized bisbenzylisoquinolines synergize with chloroquine causing resistance reversal to chloroquine as demonstrated in Aotus monkeys creating a malarial cure. He has edited and published 7 books for CRC Press, Boca Raton Florida and has written over 300 manuscripts.

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Erhabor Osaro completed his PhD in Immuno-hematology at Rivers State University of Science and Technology at Rivers State, Nigeria. He is a fellow of the Institute of Biomedical Science London. He has many scientific awards including the British Blood Transfusion Society and Margaret Kenwright- young scientist's awards. He has written more than 140 articles, 4 books and 5 book chapters. He is reviewer and editor of several scientific journals from around the World.

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