

## *Editorial*

# **Artemisinin Resistant Malaria On The Horizon:**

In early May, 2009, the World Health Organization gave another health warning. This time, it has nothing to do with the pandemic influenza; rather it is about the old enemy "Malaria". The World Health Organization had announced that malaria resistance to the front line drug Artemisinin had been noticed at Southeast Asia and specifically at the Thai-Cambodian border. The Thai-Cambodian border has been associated in the past with malaria resistance to Chloroquine and later to Fansidar. In order to contain this resistance, WHO has received \$22.5 million grant from the Bill and Melinda Gates Foundation. This will be devoted to finding ways to hold back the spread of resistance to the key anti-malarial drug artemisinin.

Malaria is one of the most ancient diseases of man. Its peers like small pox have disappeared. The malaria parasite remains a complex and ubiquitous organism and behaves like "a cat with 9 lives". If you take away one life, it appears with another life. (The Egyptian mythology has it that Bastet, the cat-headed goddess of Egypt, had nine lives and was immortal). In fact, the malaria parasite has more than 9 lives; it has survived and defeated researches and remains unconquered as of now, immortal. Malaria parasite has a complex life cycle in the mosquito and even much more complex life cycle in man. The different stages of the life cycle both in the mosquito and man range from sporozoites to hypnozoites, schizonts, merozoites, trophozoites, macro and micro-gametocytes, macro and micro-gametes, ookinetes and so on and on. Each stage behaves like an organism of its own. Resistance to any drug could develop at any of the several stages of the parasite life cycle. The complex life cycle of the malaria parasite has intrigued and confused scientists. Malaria kills about 1 million people yearly and more than 70% of the victims are from Sub-Saharan Africa.

### **What theories are in the offing to explain the global artemisinin resistance?**

Answer: Counterfeit Artemisinin with low dosage content of real artemisinin, self-medication and lack of control of drug administration by some national governments in the developing countries.

"Counterfeit artemisinin" with low doses of artemisinin are flooding the Southeast Asia and most of the counterfeits are monotherapies instead of the recommended artemisinin combination therapy (ACT). International criminals fleeing the difficult terrain of narcotic trade have cashed in by putting money into the manufacture of counterfeit artemisinin which contains very little of artemisinin ingredient. This is the major cause.

What is happening in the Thai-Cambodia border may just be a joke. On a worldwide basis, Nigeria probably harbors the largest open market for counterfeits of normally prescribed medicines. The Ariaria market in Aba in the Southeast of Nigeria remains the largest depot of counterfeits of drugs; from this open market, drugs are illegally dispatched to other parts of West Africa and the governments keep blind eyes to it. What is peculiar in this part of the world is that one does not need a doctor to get any drug. Every medication from Artemisinin, penicillin to third generation cephalosporin and even morphine are sold in the open markets by vendors who are neither pharmacists, nor nurses, nor doctors. All that one needs do is to elect to take any medication of choice on self medication.

This society has put pharmacists, doctors and qualified nurses and medical laboratory scientists out of work. The government has tacitly put a blind eye to it and has refused to organize and control the use of prescribed drugs. If the WHO is lamenting the artemisinin resistance in Southeast Asia, I challenge it to carry out a similar scientific survey in Nigeria. It may be that such a study will give us a better clue of how to tackle the global artemisinin resistance. Bill Gate's foundation has given the World Health Organization sizeable money to do this fight and WHO will pursue this fight in the wrong direction by going to their laboratories. The problem will not be solved in the laboratories.

The problem will be solved if the so called developing nations from Thailand to Nigeria will tighten the drug regulations in their countries and apply some sort of pharmacovigilance against counterfeit drugs. In Nigeria, the government should take the medical service away from the drug vendors and give it back to the pharmacists, doctors, nurses and medical laboratory scientists in order to preserve drugs like artemisinin.

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