Editorial

The 'Super-Malaria' A new intimidation In Southeast Asia

Malaria, an already dangerous and sometimes life-threatening disease transmitted by infected mosquitoes, has recently taken an even scarier turn in the form of "super malaria."
Normally an infected person would be treated with a combination of artemisinin and piperaquine, but certain malaria parasites are starting to become resistant to both drugs. Researchers declared that "the evolution and subsequent transnational spread of this single fit multidrug-resistant malaria parasite lineage is of international concern."

As of March 2017, artemisinin resistance has been confirmed in 5 countries of the Greater Mekong Sub region (GMS): Cambodia, the Lao People's Democratic Republic, Myanmar, Thailand and Viet Nam. In the large majority of sites, patients with artemisinin-resistant parasites still recover after treatment1. However, along the Cambodia-Thailand border, P. falciparum has become resistant to almost all available antimalarial medicines. There is a real risk that multidrug resistance will soon emerge in other parts of the subregion as well. Artemisinin resistance has occurred as a consequence of several factors: poor treatment practices, inadequate patient adherence to prescribed antimalarial regimens, and the widespread availability of oral artemisinin-based mono-therapies and substandard forms of the drug.

In late 2013, researchers identified a molecular marker: mutations in the Kelch 13 (K13) propeller domain were shown to be associated with delayed parasite clearance in vitro and in vivo.1 The molecular marker could allow for a more precise mapping and monitoring of the geographical distribution of resistance

This so-called super-malaria first emerged in Cambodia and has since been detected in Thailand and Laos, in addition to Vietnam, eventually jump to Africa, BBC reports. , complicating efforts to control the mosquito-borne parasites in Southeast Asia. Now potentially posing a global threat.

But in a recent sinister development, a single dominant artemisinin-resistant P falciparum C580Y mutant lineage has arisen in western Cambodia, outcompeted the other resistant malaria parasites, and subsequently acquired resistance to piperaquine2

Researchers fear that if the drug-resistant strain spreads to Africa, where 92% of all malaria deaths occur, it could worsen what is already a major crisis there. The World Health Organization is rallying to fight multiple-drug resistance by eradicating the disease completely by 2030. But it remains a tricky proposal for something that is evolving so fast that it may not have a cure.

1. Ashley EA, Dhorda M, Fairhurst RM, et al. Tracking Resistance to Artemisinin Collaboration (TRAC). Spread of artemisinin resistance in Plasmodium falciparum malaria N Engl J Med 2014; 371: 411–23.

2. Imwong M, Suwannasin K, Kunasol C, et al. The spread of artemisinin-resistant Plasmodium falciparum in the Greater Mekong Subregion: a molecular epidemiology observational study. Lancet Infect Dis 2017; 17: 491–97.

Prof. Mahmuda Hassan.
Professor of Paediatrics