

Opinion article

Probable causes of occurrence of vivax malaria in northern states, Sudan

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Vivax malaria or benign tertian malaria is a known type of malaria which is mostly occurring in temperate areas, caused by *Plasmodium vivax* which is transmitted to man when an infected mosquito takes a blood meal and then sporozoites enter blood circulation and after an hour reach the liver hepatocytes, starting exoerythrocytic schizogony, few of the sporozoites may develop into hypnozoites which is a dormant stage, that may remain dormant in the liver cells for years. Mature *Plasmodium vivax* schizonts rupture, releasing merozoites into liver sinusoids, starting the erythrocytic cycle.

Dormant stages of *Plasmodium vivax* may cause relapse and clinical features may start again, so the treatment guidelines for vivax malaria are different from the commonest type of malaria (*falciparum* malaria) and primaquine is used to damage the liver hypnozoites to protect vivax malaria patients from relapse.

Early and correct diagnosis of vivax malaria may prevent the patient from health and economic problems, due to administration of expensive drugs that may lead to renal failure due to recurrent use.

Vivax malaria is an endemic disease in East Africa mainly Ethiopia and Eritrea and eastern part of Sudan, but now it is spreading to central and north of Sudan due to massive migration of people from Ethiopia and Eritrea to Sudan and movement of population from eastern part of the country towards gold's area in the north, driving movement from East Africa to cement factories in the River Nile state, which is one of the two northern States in Sudan, most of immigrants work in markets also climate change and global warming enhance the prevalence of that type of malaria among the Sudanese population.

Points of disease surveillance must be conducted and should be well established with essential laboratory equipments and vector control programs must be promoted to face this epidemiological disaster.

Due to incorrect diagnosis and incorrect use of antimalarial drugs the guidelines of malaria treatment and therapy policy were changed, artesunate tablets and artemether injections were stopped and coartem is regarded as first line of antimalarial drugs.

We notice that vivax malaria starts with severe symptoms among young children, cause convulsions and high grade fever, so molecular studies for vivax malaria in Sudan must be conducted to know the presence or absence of mutant gene in plasmodium vivax among adults and children in northern states of Sudan.

The control and preventive methods against vivax malaria is extremely weak due to inadequate training to laboratory technologists, absence of health education programs and ineffective vector control methods.

Collaboration between governmental, nongovernmental and international organization is very important to prevent the massive spread of vivax malaria in Sudan and then to north African countries. Wars, famine and dreams of youth of east to migrate to other countries through illegal immigration , are the major causes of many economic, social and health problems that may be appear very clearly in the coming decades .

Africa is a very rich continent with natural and human resources but it suffers from wars, which stopped the development in the most of African countries, particularly East African countries.