**Introduction**

*Opening*

Malaria is one of the oldest and deadliest infectious diseases in human.(Depinay et al., 2004)，Since Laveran find the plasmodium, medical research developed rapidly. However, after using different medicines contain Chinese traditional medicine like Artemisinin and modern medicine like Quinine . Malaria remains uncontrolled and is increasing in many areas. Artemisinin used to consist effective drug for malaria, but Long-term use of the same kind of drugs contributes to the drug resistance. Therefore some Artemisinin-based compound medicine such as Artecom are produced to replace the pure Artemisinin medicine. However, the cost of Artecom is a little high, so that many poor areas can not afford it. In order to reduce the cost, we explore whether we can shorten the therapy from 3 days to 2 days

*Biology*

Malaria infection includes 2 steps, one that plasmodium grows in the liver (exoerythrocytic phase), and one that plasmodium grows in the red blood cells(erythrocytic phase). When an infected mosquito took the blood from one person to another person, the plasmodiums would also transfer to another person with mosquito’s saliva. The plasmodiums accumulated and then cause the red blood cells broken.

The signs and symptoms of malaria typically begin 8–25 days following infection; however, symptoms may occur later in those who have taken antimalarial medications as prevention.

*History*

Malaria had been threating the world for 50,000–100,000 years，In 1880, Laveran firstly observed parasites inside the red blood, and proposed that malaria is caused by this organism, it was the first time a protist was identified as causing disease. Then a Cuban doctor treating people with yellow fever in Havana, provided strong evidence that mosquitoes were transmitting disease from human to human. Since April 1894, a Scottish physician Sir Ronald Ross and Sir Patrick Manson devoted to the research about malaria for 4 years, and finally they proved the complete life-cycle of the malaria parasite in mosquitoes by dissecting the mosquitos. Nowadays, malaria still do harm to many places in the world.

*Global Problem*

Africa represents the worst areas for malaria, it has 364.98 millions patients which suffered P. falciparum, and Southeast Asia is the next, which has 118.94 patients. According to the WHO and UNICEF, deaths attributable to malaria in 2015 were reduced by 60% from a 2000 estimate of 985,000, largely due to the widespread use of insecticide-treated nets and artemisinin-based combination.

In China, Hainan, Yunnan are the main infected areas.(Gething et al., 2011)

*Anti-Malaria Drugs*

In ancient China, the doctors mainly used  Yingzhaosu A, zincpolyanemine, and artemisinin to cure the malaria. Artemisinin used to be very efficient on malaria treatment. The World Health Organization (WHO) currently recommends artemisinin-based combination therapies (ACTs) for malaria control.(Bhattarai et al., 2007)

Recently, the drug resistance became a big problem. And more compound artemisinin based medicines were produced to cure the malaria.

Artemether is one of the medicine that China produced, According to (郭宗儒, 2016), its anti-malarial activities is about 2 times higher than artemisinin, but it needs a long course of treatment (5 days). There is another defect that it only lasts a short period in blood so that plasmodium is easy to survive and recrudesce. The compound artemisinin which combines long-acting and short-acting composition would increase the effective time, but more medicine compositions are possible to cause more side effects, and their cost are a little high.

*Aim of our study*

To investigate a low-cost therapy, which still has high-efficiency, lower toxic and side effects, we try to shorten the course from 3days to 2days.

*Therapy*

The therapy needs a 2 days’ treatment , and there are no side effects performed locally or generally in most of patients we observed. To evaluate the toxic and side effects, we record the blood and fever condition of the patients. In the first week, the patients lived in the hospital and then they go home, we recorded the condition before and after they take the medicine for the whole 3 weeks. That includes headache, deaf, fever and other side conditions. Within 3 weeks, we continue to track and record all the information such as protozoology examination, hematology and blood biochemical examination about the patients.

*Results*

Our experiment with the 2-day therapy shows that the cure rate is still 100% and no one recrudesce. All of patients have no intolerant side effects. That means the 2-day therapy can save cost and be recommended to the poor areas.

**Reference**

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