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Editorial

Malaria: Artemisinin Teas; A False Good Idea

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Every year, more than 600000 people die from malaria in tropical countries, particularly in sub-Saharan Africa. The main means of combating malaria are the use of mosquito nets, the ease of new diagnostic techniques and the effectiveness of artemisinin-based treatments. For many years, malaria treatment has been based on chloroquine and quinine. But since 1960, resistance to the drug has emerged and quickly spread throughout the world. As a result, this product is no longer prescribed and its production has been stopped. Other drugs have therefore been used, such as mefloquine, atovaquone, and especially artemisinin.

Artemisinin is extracted from an Asian herb, Artemisia annua (or Qing Hao in Chinese) (Figure 1) has been used in traditional Chinese medicine to treat hemorrhoids and "heat in the joints." The leaves and stems are burned as an insecticide. During the Vietnam War, the Viet Cong, harassed by mosquitoes in the swamps, took high doses of Artemisia imported from China (1). In 1972, the artemisinin molecule was isolated from the leaves of Artemisia. It appears that this plant has possible activity against various parasites, viruses, bacteria and fungi (2). Then this plant was studied by a Chinese researcher Youyou-Tu who showed its excellent effectiveness on malaria, which earned her the Nobel Prize in 2015 (3). In addition, she clearly demonstrated the importance of combining this rapidly eliminated drug with another long-acting product to achieve an effective and complete treatment. Artemisia afra is a perennial shrub from south-east Africa used in traditional local medicine for respiratory, digestive, gynecological and dermatological pathologies (4,5).

But for several years now, a company has been developing, under a pseudo-social pretext, the cultivation of Artemisia annua and Artemisia afra, which it collects to make herbal teas. These Artemisia-based herbal teas are very cheap and can, in fact, improve the health of the population somewhat. Several companies have been created to develop this activity, explaining that the cultivation of this plant can be done in all villages, with the possibility of making "magic" herbal tea. (6). According to the authors, the study shows the superiority of the herbal tea. But it is based on simple clinical observations, without rigorous biological study. Other serious publications demonstrate the opposite (7).

This study appearing to be unscientific and therefore unreliable, the French National Academy of Medicine decided to ban the promotion of this herbal tea which, under a social pretext, has a significant risk of developing resistance to this product, which would be catastrophic for the populations concerned (8). Moreover, as expected in 2015, the WHO rightly opposes monotherapy with this product (9), and publishes the case of parasites already partially resistant to artemisinin in the Mekong basin and then in different African countries, with the risk of rendering this product ineffective (10-14).

The composition of herbal teas varies considerably

Author's Biosketch

Professor Patrice Bourée was for 40 years the head of the Parasitic and Tropical Diseases Department of the Paris IX University. Professor at the College of Medicine in Paris, he is currently a Consultant Professor at the Alfred- Fournier Institute, which is a renowned medical center of infectious diseases. He worked on different subjects of tropical pathology (bilharziosis, filariosis, amoebiasis, malaria…) in Africa, South America, Pacific islands and recently in Mayotte (Indian Ocean) on leprosy. He was the first to describe, in 1976, an outbreak of human trichinellosis due to horse meat, which is well known today. More than 1700 scientific papers written by Patrice Bourée. He has published several books, in French, the most recent of which are: Aide-mémoire of Parasitology 400p, Pregnancy and Tropical Pathology 200p, Parasitology and Mycology in pocket 105p. He is Commander of The Academic Palms of the University and member of several scientific societies.

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Figure 1. Artemisia annua

depending on the growing location, harvesting methods, and manufacturing processes. In addition, the dosage of herbal teas varies depending on the water temperature and the brewing time. Whether the plants are crushed and juiced or the leaves are crushed and powdered, the results are equally disappointing, which also explains the WHO's opposition to the distribution of this product.

In conclusion, international health authorities are, of course, interested in the development of artemisinin as a treatment for malaria, but always combined with another antimalarial product to improve its efficacy and avoid the occurrence of resistance. But they are opposed to the use of artemisinin alone, and even less so in herbal tea or powder, the dosage of which is highly variable, with a risk of being ineffective but above all a source of spread of resistance. Currently, there is still no replacement treatment. After the disappearance of chloroquine due to its ineffectiveness, it is absolutely necessary to prevent this from happening with artemisinin.

Authors' Contribution

Conceptualization: Patrice Bourée.
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Competing Interests

None.

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