



Management of Childhood Fevers at Home in the Rural District of Dolisie among Poor Families (Congo-Brazzaville)

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Abstract

Original Research Article

Fever constitutes the first reason for consultation and hospitalization in pediatric practice in Africa. In Congo, as elsewhere in Africa, fever is most often compared to malaria, a situation which can be explained by the fact that the latter constitutes the primary cause of febrile illnesses [1]. Managing fevers at home requires early diagnosis and appropriate treatment. In sub-Saharan Africa, the WHO advises that any febrile syndrome should prescribe presumptive treatment with a usual antimalarial [2]. The National Malaria Control Program (PNLP) recommends chloroquine as first-line treatment, although Congo faces the problem of chemoresistance [3-6]. On the ground, the PNLP's recommendations come up against contrary practices on the part of families, following the use of unsuitable medications sold by "sidewalk pharmacies".

Keywords: Fever, children, families, socio-economic life, malaria, treatments.

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INTRODUCTION

In Congo Brazzaville, as elsewhere in Africa, fever is the primary reason for consultation and hospitalization in pediatric practice. This situation is explained by neuro malaria being the primary cause of febrile illnesses.

Home management of fevers requires early diagnosis, and appropriate - and sometimes even inappropriate - treatment (wrong dosage, or incorrect use of the treatment). In sub-Saharan Africa, the WHO recommends presumptive treatment with an antimalarial drug for any febrile syndrome. The disease is hyper or holo-endemic throughout the country. The disease is a real public health problem and remains one of the country's leading causes of morbidity and mortality. The most common vector is *Anopheles gambiae* (90%). The main plasmodia species found throughout the country is *Plasmodium falciparum*. The entire population is at risk of contracting the disease, but pregnant women and children under 5 are the most vulnerable groups. For the under-5s, malaria accounts for 73% of causes of outpatient consultations, 48% of causes of hospitalizations, and 47% of causes of death at the hospital level (PNLP RMP Report 2017).

WHO recommends using artemisinin-based combination therapies to treat uncomplicated *P. falciparum* malaria cases. This combination rapidly erases parasites from the blood (reducing the number of parasites by around 10,000 at each asexual cycle every 48 h). It is also active in the sexual stages of the parasite capable of being transmitted to mosquitoes.

Although the Congo faces the problem of chemoresistance. In the field, the NMCP's recommendations come up against contrary practices on the part of families, following the use of unsuitable drugs sold by "sidewalk pharmacies". Faced with the proliferation of informal channels for the sale of illicit medicines and anti-malarial drugs, we thought it appropriate to undertake a behavioral study in relation to child fever and the use of anti-malarial products as recommended by the WHO.

Our work aims to:

- Identify the clinical signs indicative of malaria on the basis of questioning
- Identify treatments administered at home by mothers to manage fevers, based on knowledge of the signs of malaria

- Identify sources of supply for commonly used drugs
- Identify therapeutic recourse in health centers and prescribing habits based on health diaries
- Identify reasons for the non-use of health centers.

MATERIALS AND METHODS

Study Area

Carried out in rural Dolisie, the third largest city in the Republic of Congo, located in the south of the country on the Pointe-Noire-Brazzaville axis. It is located in the Niari department, of which it is the capital. The town is linked by Route Nationale 1 and the Congo-Océan railroad (CFCO) to the country's two main cities, Brazzaville (350 km) and Pointe-Noire, as well as to Gabon, some 200 km to the north. The town has an estimated population of 80,000, divided between 13,440 households (last census in 2006). The climate is tropical, Aw type according to Köppen's classification, with an average annual temperature of 24.5°C. The climate is similar to that of Brazzaville, with a rainy season from October to May, interspersed with a dry season from May to October. Malaria is holo-endemic.

Study Population

The study was based on a sample of 560 children under the age of six who presented with a fever seven days prior to the survey and were treated at home or in a health center with a standard antimalarial. The sample size was determined according to a type of probability sampling recommended by the WHO. Thus, 30 samples of 20 children each were selected, for a total of 560 children. A first draw in the center of the town indicated the direction to follow, and all the family plots in this direction were marked. And the second draw was

the one that allowed us to determine the area where the survey should take place.

Data Collection Method

This was a cross-sectional survey using standardized questionnaires, conducted from August 16 to January 16, 2023. The progression from household to household was carried out from close to close, after choosing the first household in front of you. Parents whose children met the inclusion criteria were interviewed. Mothers were interviewed using a questionnaire previously tested with families. This questionnaire was used to collect data on treatments administered at home, therapeutic recourse to health centers, anti-malarial drugs used in self-medication, preferred forms of medication, reasons for non-recourse to the health center, and sources of medication supply.

RESULTS

Clinical signs indicative of malaria

The symptoms found to indicate malaria were as follows: fever in 120 cases (21.4%), asthenia in 201 cases (35.8%), vomiting in 108 cases (19.2%), chills in 96 cases (17.1%), and diarrhea in 35 cases (9%).

Home treatment

In many of our patients, 435 (77.6%) were self-medicated at home, while the remaining 125 (22.3%) were treated at a health center. For those treated at home, paracetamol-type antipyretics were recommended by a health worker in 195 cases (44.8%), by a family member in 120 cases (27%), by neighbors in 67 cases (15.4%), and by a pharmacist in 53 cases (12%),

Tables A and B show preferences for antimalarial drugs used for home self-medication.

Table A: Anti-malarial drugs used at home for fever self-medication in 435 children

Medicines Used	Numbers	Percentages
chloroquine	180	41,37
Artemether + lumefantrine	92	21,11
Artesunate + pyronadine	87	20
traditional herbal tea	54	12,4
Dihydroartiminin + piperaquine	22	5
total	435	100

Therapeutic use and prescribing habits

Of the 125 children (22.3%) who went to a health center, fourteen (21.11%) had received Artemether + Lumefantrine at home, 22 (5%) had received Dihydroartiminin + Piperaquine, and the remaining 11 children had used herbal teas as a presumptive treatment for malaria, despite their visits to the health center. The average time taken to visit a health center after the onset of malaria-related symptoms was 2 to 3 days.

For those who had followed the recommended treatments, we noted improvements in symptoms between the 2nd and 3rd day after treatment, and

persistent or even worsening symptoms for those who had used traditional treatments.

Table B: Anti-malarial drugs used to treat fevers in 125 children at the health center

Medicaments	Numbers	Percentages
injectable antimalarial	65	42,7
Artemether + lumefantrine	35	28
Arthesunate + pyronadine	11	8,8
Chloroquine	14	11,2

Medication Number Percentage (%)
Injectable antimalarials 65 42.7

Reasons for Non-Use

Non-use of the health center is recorded in Table C. The main reasons given for the non-use of the health center by 435 children treated at home:

Table C

Lack of money:	120
Availability of treatment at home:	98
Fear of prescription costs:	79
Inaccessibility to health center:	53
Assistance by a health worker:	22
No answer:	63
Total:	435

DISCUSSION

The management of fevers at home remains a real health problem among all the cases identified in our context. Most of the signs mentioned by the parents define those of malaria and require presumptive treatment or referral to a health center. Asthenia, chills, and vomiting. These signs are the same as those found in similar studies.

This shows that the majority of mothers are well aware of the malaria control strategy recommended by the PNLP. While in holo-endemic zones such as Dolisie, fever is associated with malaria in 21.4% of cases, it is important to note that many childhood illnesses have fever as a major symptom. This is particularly true of respiratory infections and viral diseases. 77.6% of mothers self-treated at home, while 22.3% went to a health center.

Reasons for non-use include the availability of medicines at home, inaccessibility to the health center, and, above all, lack of financial resources. In other words, when conditions of geographical and economic accessibility are limited, they clearly lead to low use of the health center, thus constituting risk factors for the child. As for first-line treatment administered at home, the antimalarial chosen as first-line treatment is generally recommended by the NMCP.

This is the injectable antimalarial, followed by artemether combined with lumefantrine, then artesunate

+ pyronadine, and finally chloroquine. These findings are virtually identical to those of the Senegalese and Nigerian authors. Analysis of the treatment records, when the child was brought to the health center, showed that, unlike the studies carried out in Guinea and Niger, injectable antimalarials were prescribed as the first-line presumptive treatment for fever, followed by chloroquine. The choice of injectable antimalarials as first-line treatment is contrary to the results of studies carried out in Guinea and Niger, where chloroquine comes first, followed by injectable antimalarials. Pruritus, often encountered in young children, was undoubtedly a reason for refusing chloroquine.

Sources of supply vary, from public pharmacies to "sidewalk pharmacies", although many of the mothers consulted buy their medicines from public pharmacies. The use of the informal sector for the over-the-counter sale of medicines is becoming widespread in our countries. The attraction of this growing informal sector in rural areas certainly represents the cheapest and most accessible solution for the rapid management of fevers.

CONCLUSION

In areas where malaria is endemic, presumptive treatment of febrile children with antimalarial drugs is an essential part of the WHO strategy. There are many etiologies responsible for fevers.

Appropriate management of fevers in the home requires constant awareness-raising among people consulting health centers, through information, education, and communication sessions, so that the drugs used for self-medication comply with the recommendations of the national malaria control program.

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