

MALARIA TREATMENTS PRACTICES BY MOTHERS/CAREGIVERS IN ENDEMIC COMMUNITIES OF AFRICA: A REVIEW

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ABSTRACT

Malaria treatment practices have been acknowledging as a tool for the control of malaria or reduces the burden associated with the disease. Prompt intervention and action by the mothers or caregivers and accessibility to drugs with right prescription and follow up after treatment can abate death and promote effective home management of malaria. The paper reviewed different approaches to the management of the disease by mothers and caregivers as cited by many authors, especially the choice of effective drugs over the failing malaria drugs, the herbal treatment most of which the efficacy cannot be ascertained. In conclusion, home management of malaria when well-practiced will reduce the morbidity and mortality due to malaria greatly especially in rural areas most that lack good health care facilities.

Keywords: Treatment, mothers, management, rural areas, practices, hospitals, drugs.

INTRODUCTION

Malaria is a persistent health problem in Africa. Each year, 300-500 million people worldwide suffer from the disease, with 9 out of 10 cases occurring in sub-Saharan Africa (WHO, 2018). Most death occur in the children age range 0-5 years have been attributed to malaria in the developing nations of African and part of Asia. According to World Health organization (2001), before the age of five, there is possibility that one out of five children will die of malaria. The ailment affects human productivity and affects child health and school attendances which are all indicators of social development. Home management of malaria has is primary root on combating the menace associated with malaria in Africa and other malaria prone regions of the world. Therefore, if well practiced, it can reduce morbidity and mortality associated with it.

In the design and implementation of malaria home management the components are: access to effective, high quality, pre-packed antimalarial drugs at the local level and effective training of community-based service providers to equip them with necessary skills to manage febrile illness or malaria and good communication strategy for supervision and monitoring of the community activities (Chukwuocha, 2011; WHO, 2005)

It has been discovered that one of the problems of malaria management and early treatment is poor access to public facilities mostly especially in rural areas of developing world of sub-Saharan Africa and as a result of this, several communities have resulted into self-medication through the unregulated private and informal sector (Apetoh, Tilly, Baxerres, Jean, & Yves, 2018). Although cultural beliefs and perceived caused of the ailments are determinants of health seeking behaviour in Africa, access to health care facilities and cost of procuring drugs are other major factors that count (Latunji, & Akinyemi, 2018; Mccombie, 1996; Omeire, 2017). Also, distance travelled to seek for the treatment, the cost of treatment procurement, the attitude and perceived expertise of provider, time spent at the facilities and availability of relief materials like drugs are among factors that determine the choice of health seeking (Snow, Peshu, Forster, Mwenesi, & Marsh, 1992). Failure of public health services to delivers timely and effective treatment of malaria had led to home management of malaria (WHO, 2005).

Among the objectives of home management of malaria are to enable caregivers to recognize illness at early stage and responds on time, to ensure adequate knowledge of caregivers and making medicine available at all the time (WHO, 2001). Despite the advantages of home management of malaria, it comes with other challenges and among these is inappropriate and incorrect practices by mothers and other care givers resistance to malaria by the existing drugs also make the home management to be a herculean task (Ajayi *et al.*, 2008; Okonkwo, Akpala, Okafor, Mba, & Nwaiwu, 2001; Salako *et al.*, 2001). The basis of this review is upon the facts that; many of the deaths of children less than five years of age in Africa due to malaria occur as a result of limited ability of mothers/caregivers to recognize early symptoms and initiate treatment. However, home treatments of malaria assessment studies across Africa and Asia have shown that the quality of such treatment is often poor. Challenges of home treatment which among others are; excessive usage or inappropriate drugs, wrong prescription or wrong dosages are among others challenges.

Treatment of Malaria and Challenges:

The continuance high level of resistance of malaria parasite to the early existing drugs like chloroquine, sulfadoxine-pyrimethamine or the combination of these drugs has largely compromised their efficacy and hence the adoption of Artemisinin combination therapy (ACT) as first line malaria drug in many countries (Koram, Quaye, & Abuaku, 2008). The potency of ACT as drug for the treatment of malaria has never in doubt and its ability to reduce the transmission of malaria has been largely reported (Pyae *et al.*, 2017). In the efficacy test of Artemisinin and its derivatives, the drugs can eliminate malaria parasite in 1000 folds compare to other existing malaria drug like chloroquine that has lesser potency (WHO, 2005). When administered with rapidly absorb compounds like tetracyclines, clindamycin, Artemisinin and its derivatives can rapidly be eliminated from the body. ACTs are the most effective antimalarial medicines available today (WHO, 2011).

The recommendation by the world health organization on the malarial drug treatment policies in Africa and adoption of ACTs has finally replaced the Chloroquine and sulfadoxine pyrimethamine based treatment which is failing drugs (Nosten, & White, 2007; WHO, 1999). Artesunate drug is not recommended alone to reduce the risk of resistance but in combination with another drugs. This takes the advantages of quick schizonticidal action of artesunate and long duration action of the partnering drugs to effect rapid cure with low level of recrudescence, this has a good advantage in clinical medicine, Treatment with Artemisinin alone discourage the further usage of the drug thereby leads to drug resistance.

In order to reduce this risk and ensure high efficiencies of the drug, monotherapeutic treatment is discouraged and it was recommended for withdrawal from the circulation and combination therapies was recommended (Cui, 2011). It was a great concern that resistance of malaria parasite to artesunate will be a great consequences as had happened with chloroquine and sulfadoxine-pyrimethamine (Bosman, & Mendis, 2007). The most widely advocated combinations are those in which the artemisinin compounds are combined with a longer acting antimalarial. According to Cui (2011), such combination include: Artemether (20 mg) plus Lumefantrine (120 mg) per tablet. Others are Amodiaquine (10 mg/kg) plus Artesunate (4mg/kg) and Mefloquine (15-25 mg/kg).

High price is one of the major reason of reluctance of most counties not to have adopted ACT (Balogun *et al.*, 2013), although many countries have adopted multiple financial mechanism and international aids to help countries adopting ACT therefore increasing number of countries are now replacing ineffective monotherapies with ACTs (Cohen *et al.*, 2013; Pyae, & Seidlein, 2017).

Some others options even though suggested as combination therapies for the treatment of malaria but were never recommended by WHO are: Chloroquine-based combination (CQ+SP, CQ+artesunate), one daily treatment of artesunate and sulphadoxine pyrimethamine, mefloquine-based combination (e.g. mefloquine plus artesunate) in areas of high malaria transmission and one day treatment of artesunate plus mefloquine in the acute phase of a complex emergency of malaria epidemics (WHO, 2005). There are many reasons of non- adoption of these combination in the treatment of malaria, among these are, it was only in west Africa that the efficacy of chloroquine and Suldoxine –pyrithemine is high; as both amodiaquine and SP are currently in wide usage as monotherapies; it is opined that the adoption of this combination therapy will not significantly delay the spread of resistance to either drug, Furthermore, the adoption of combination therapy of amodiaquine plus SP is likely to be a short term solution; even in areas where the efficacy of both amodiaquine and SP remain high, their combined use will compromise the useful therapeutic life of both, and this will endanger their potential use as partner drugs for artesunate ACTs (Koram, Quaye, & Abuaku, 2008).

It was of opinion that rather than compromise the efficacy of SP as a component of Combination therapy SP should be reserved for IPT. As the process of drug policy change and implementation is resource and time intensive, all efforts for improving access to treatment should be directed towards implementing the most effective and durable treatment policy (FMH, 2005). ACT as first line drug for the treatment of malaria can only be useful and potent if the providers assumption practices is conform to the recommended guidelines, this will enhance public health benefits as of the drug prevents the resistance of the drugs the case with chloroquine, therefore the importance of training of health providers and educating the caregivers and mothers cannot be over emphasized (Eastman & Fidock, 2009). At early introduction of ACT as the first line drug for the treatment of malaria, many countries that adopted it find it difficult to implement (Latunji, & Akinyemi, 2018) but the rate of implementation has now significantly improved in Africa and other malaria endemic nations of the world.

In a qualitative studies of factors affecting the prescription of arthemether–lumenfantrine (AL) in a five rural districts of Kenya which has an adaptable intensities of malaria transmission; many factors were identified associated with prescription of ACT by health works; the poor knowledge of its administration due to contradict

messages from various providers, also health workers were at opinion that the drug is expensive and they might run out of stocks despite appreciating government effort in providing the drug at subsidized rate (Wasunna, 2008) .

The prescription of ACT is associated with many factors which are the poor knowledge of its administration as a result of conflicting messages from providers and also the assumption that the drug is expensive and might not stand the test of time and run out of stock (WHO, 1999) .In a review article of home management of malaria in some African countries; home based management was observed to be good and quick intervention mode for reduction in mortality due to malaria (Hopkins, Talisuna, Whitty, & Staedke, 2007). There is need for training especially mother and drugs retailers especially those that were not formally trained for it for home management to be effective. In most part of Africa especially, where qualified pharmacist are rare, drugs for malaria management are frequently purchase from untrained retailers in general shops. The reasons for this include greater geographical accessibility, shorter waiting times, longer openings hours, more reliable drugs stocks, confidentiality and lower costs (Bosman & Mendis, 2007;Druetz, Ridde, Kouanda, Diabaté, & Haddad, 2015).Therefore, most of these children treated at home received inappropriate doses .According to WHO/UNICEF (2003), only 42% of these children under- 5 years were treated with proper antimalarial drugs. In rural Kenya, educational programme for general shopkeepers and communities improved in the use of right drug over the counterfeit anti-malarial for childhood fever (Brugha & Zwi, 1998)

Effective home management is linked to timely decision, accessibility and correct use of the drugs by caregivers and follow-up after prescription. In a study conducted in Burkina Faso, despite policy change to artemisinin-based combination therapy, antimalarial drug recommended consisted mainly of chloroquine (Tipke *et al.*, 2000). In a similar study conducted, it was concluded that due to health provider's preference and problems of accessibility and affordability of ACTs, chloroquine was the most widely preferred antimalarial drug (Sadiq *et al.*, 2009).

Artemisinin enhances efficacy and has the potential of lowering the rate at which resistance emerges and spreads.ACT as the first line drug for the treatment of malaria has been since 2001 but the deployment of this drug has not been encouraging and low and many factors that are associated with it are cost of procurement, limited or poor knowledge of its efficacy and safety in pregnancies and lack of post-marketing surveillance system and also imbalance between demand and supply (Adewole, Oderinde, Bankole, Faparusi, & Oyede, 2013b; McCombie, 1996)

Herbal Treatment of Malaria

Despite the high rate of transmission of malaria in developing countries, modern drugs are not usually available and where it is available, the cost of procurement might not be at reach of poor, most that are victim of the infection (Adewole, & Faparusi, 2015). Resistance to drugs and rapid spread has made treatment more difficult and less successful, thereby making the use of herbs more popular in an attempt to search for more potent, affordable and cost effective alternative, very urgent.

However, the treatment provided by these herbalists depends on high extent on the knowledge of the various aspects of the disease, diagnostic methods and treatment options which varies from one country or region to another. Traditional remedies in Africa comprise of usage of herbs; spiritual assistance including seeking help from church and traditional healers. In the socio-cultural context, traditional beliefs are the basis for the local definition of health problems occurring in the community as whether they are due to natural causes, spirits or bewitchment. This therefore also affects the health seeking behavior of people in such settings (McCombie, 1996; Makundi, Malebo, Paulo, Kitua, & Marian, 2006). Home management of malaria under traditional setting varies from community to community. This includes prescription of various herbs by traditional healers or village elders or in some cases experienced caregivers.

In Kilosa and Handeni districts of Tanzania, one way of managing a child suffering from mild or severe malaria by mothers involved a mother urinating on the child which is believed to lower the temperature of the child's temperature (Latunji, & Akinyemi, 2018). Among the Bwatiye people of North Eastern Nigeria, self- medication with herbs and herbal portion is the preferred mode of treatment among many alternatives for most mothers. However, young mothers were less inclined to use self –medication with herbs they either wait for the husband before taking an action or consulted an older woman or mother's in-law (Akogun, & Kaunna, 2005). Another form of traditional home management in Africa is seeking help from traditional healers through divination to know the actual cause of the diseases usually when the initial home management using herbs by mothers or caregivers has failed (Akogun & Kaunna, 2005). In Africa setting, seeking such diseases are attributed to witch craft or other demonic attack (Makundi *et al.*, 2006).

While the fight against malaria go unabated as a result of several factors which include the resistance of the parasite to the drugs and the resistance of the vector to insecticide (Adewole, Oderinde, Bankole, Faparusi, & Oyede, 2013a). One very important aspect of the control which is use of Long lasting insecticide net (LLIN) must be emphasized by policy makers and others stakeholders. The importance of Insecticide-treated nets (ITNs) as a tool in controlling malaria can never be over-emphasized; it has been associated with substantial reductions in malaria transmission (Adewole, & Faparusi, 2015). Within the Integrated Vector Management (IVM) approach for malaria prevention, ITN clearly forms the major approach. Free public sector routine distributions of ITNs have been advocated by World Health Organization (WHO, 2005) but this might not translate to free use at times (Adewole, Faparusi, & Alli, 2012) except it is integrated with health education.

In conclusion, this review study showed that home management of malaria when well executed can reduce the burden of malaria, increase school attendance by school children, and reduce the economic burden of the disease. This practice becomes necessary especially in Africa where the health care system is still poor and good ones are not at the reach of poor masses. However, health education and making the drugs available and at subsidizing rate to rural dwellers must be emphasized. Referral practices for severe malaria must also be encouraged as part of health education.

Authors' contributions

While A.A facilitated the idea of the research paper reviewed, both authors (A.A and F.F) have equal contributions in sourcing for the relevant journals as references.

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