

Malaria chemoprophylaxis during pregnancy: a survey of current practice amongst general practitioners in Port Harcourt, Nigeria

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Abstract

Background: Malaria is a common health problem especially among the pregnant women in endemic countries such as Nigeria. Sulphadoxine/pyrimethamine (SP) has been recommended by the World Health Organisation (WHO) for malaria chemoprophylaxis in pregnancy and has been incorporated into our national malaria control programme. General medical practitioners provide prenatal care for significant proportion of our women in pregnancy.

Aim: To examine the current knowledge and practice of malaria chemoprophylaxis during pregnancy among general medical practitioners in Port Harcourt, southern Nigeria.

Methods: It was a questionnaire based study of 90 general medical practitioners in Port Harcourt, southern Nigeria which sought for their socio-demographic characteristics and knowledge and practice of malaria chemoprophylaxis during pregnancy. The data were entered into a personal computer and analysed using SPSS for windows version 10.0 and presented as frequency tables and percentages.

Results: Of the 90 questionnaires, 59 duly

completed forms were retrieved, giving a response rate of 65.60%. The age range of the respondents was 21-60 years with 31-40 years as the most common range. Only 33(55.93%) respondents knew the current malaria chemoprophylactic agent in pregnancy as recommended by WHO. Almost all (98.30%) respondents administered malaria chemoprophylaxis routinely to their antenatal women but only 44.06% administered correctly SP as recommended.

Conclusion: The knowledge and practice of the WHO recommended malaria chemoprophylaxis in pregnancy among general medical practitioners is below average. Training and re-training of these primary care physicians on the use of sulphadoxine-pyrimethamine will tremendously improve their knowledge and practice of this WHO recommended chemoprophylactic agent in pregnancy which will in turn reduce malaria - related perinatal and maternal complications.

Keywords: Malaria, Chemoprophylaxis, Pregnancy, WHO, General Practitioners

Introduction

Pregnant women are particularly vulnerable to malaria especially during the first pregnancy¹⁻³ and this poses a serious problem to antenatal care in malaria endemic regions such as Nigeria and the entire sub-Saharan Africa. Malaria is currently recognized as the most common ailment occurring in pregnancy in many countries in this sub-region⁴. In Nigeria, about 47% of pregnant women are diagnosed with malaria⁴. This infection may cause harmful effects on the mother with retardation of

foetal growth as a result of placental parasitaemia⁵.

Malaria parasitaemia has been known to cause maternal anaemia, increase in the prevalence of low birthweight and stillbirths^{3,6}. This is of particular concern because low birth weight is associated with increased neonatal and early infant mortality^{7,8}.

Chemoprophylaxis for malaria in pregnancy has been shown to reduce the risk of malaria infection in all pregnant women and to increase significantly the birth weight of babies born to

primigravidae^{38,9}. In the last two decades, the efficacy of chloroquine, proguanil and pyrimethamine have diminished significantly as a result of the emergence of multi-resistant strains of *Plasmodium falciparum*⁹⁻¹¹. This has led to recommendation of intermittent preventive treatment (IPT) with sulphadoxine/pyrimethamine (SP) by the World Health Organisation (WHO) to be commenced after 16 weeks of gestation^{12,13}.

Studies have shown that IPT with sulphadoxine/pyrimethamine protects against low birth weight and reduces the prevalence of severe anaemia in primigravidae when given two to three times during pregnancy¹². On the basis of these findings, the WHO appropriately recommended IPT with SP for all pregnant women resident in areas of medium or high malaria endemicity¹³ as one of the three prong approach to the strategic framework for malaria prevention and control during pregnancy. The others include the use of insecticide treated nets (ITN) and effective case management of malaria illnesses and anaemia¹⁵.

Majority of pregnant women in this part of the world visit general practitioners for antenatal care¹⁴. Our aim is therefore to scrutinize the practice of the WHO recommendation for malaria chemoprophylaxis in pregnancy among these general practitioners.

Methodology

It was a questionnaire based study carried out among general medical practitioners in Primary Health Care Centres and private hospitals in Port Harcourt, Rivers State, South- South Nigeria, in October, 2011.

Ethical approval was given by the University of Port Harcourt Teaching Hospitals' Ethics Committee.

The list of all Primary Health Care Centres and registered private hospitals in Port Harcourt was obtained from the Rivers State Ministry of Health and their locations subsequently identified by trained research assistants. The details and objectives of the research were discussed with the practitioners in these centres and their cooperation

and consent solicited.

In the absence of a similar study previously in Port Harcourt, all 90 consenting general medical practitioners who provide regular antenatal care services in these facilities were therefore recruited for the study. Those who did not give consent, do not offer maternity services, obstetricians and other specialist practitioners were excluded.

The study instrument was a semi structured, self-administered questionnaire which sought information on the respondents socio-demographic characteristics, knowledge of World Health Organisations (WHO) recommended drugs for chemoprophylaxis/ intermittent preventive treatment (IPT) in pregnancy, dose and frequency and their current practice regarding these.

The questionnaire was pre-tested during the induction and orientation of newly recruited resident doctors of the University of Port Harcourt Teaching Hospital in September, 2011 and necessary corrections made. The questionnaires were then distributed by the trained research assistants to the respondents in their various facilities. Duly completed questionnaires were then retrieved, information obtained coded, fed into a personal computer, analysed using SPSS windows version 17.0 and results presented as percentages and frequency tables.

Results

Of the 90 respondents, only 59 duly completed questionnaires were retrieved, giving a response rate of 65.60%.

The age range of the respondents was 21-60 years while the most common age range was 31-40 years (Table 1). Thirteen (22.03%) respondents were in the age range of 21-30 years while only 7 (11.86%) were aged 51 years and above.

Table 2 shows the respondents knowledge of WHO recommended chemo-prophylactic agents in pregnancy. All the respondents were aware of malaria chemoprophylaxis, but only 33 (55.93%) knew correctly the WHO recommended agent for malaria chemoprophylaxis in pregnancy.

Seven (11.86%) administered only proguanil while 3 (5.08%) will give a combination of sulphadoxine/pyrimethamine and proguanil to their antenatal patients.

Thirty nine (66.10%) respondents commenced malaria chemoprophylaxis after 16 weeks of pregnancy while only one (1.69%) administers the agent any time at booking. Surprisingly, none of the doctors prescribe these drugs during the 3rd trimester of pregnancy as shown in Table 3.

Interestingly, only 26 (44.06%) of the practitioners correctly practised intermittent preventive treatment with sulphadoxine/pyrimethamine as recommended by the World Health Organisation.

Ten (16.95%) will give only proguanil while 11 (18.64%) will give pyrimethamine only the pregnant women as depicted in Table 4.

Thirty seven (62.71%) practitioners admitted having a protocol for malaria chemoprophylaxis while 17 (28.81%) had none. Of the 37 that had protocol, only 9 (24.32%) stated IPT as their protocol.

Table 1. Age distribution of respondents

Age (Years)	Frequency	Percentage (%)
21 -30	13	22.03
31 -40	28	47.46
41 -50	9	15.25
51 -60	7	11.86
61 -70	0	0.00
Unspecified	2	3.40
Total	59	100.00

Table 2. Knowledge of chemoprophylactic agents

Chemoprophylactic Agent	Frequency	Percentage (%)
Sulphadoxine/Pyrimethamine(SP)	33	55.93
Proguanil(Pro)	7	11.86
Pyrimethamine (Pyr)	7	11.86
SP+Pro	3	5.08
SP+ Pyr	2	3.40
SP+Pro+Pyr	2	3.40
Chloroquine (CQ)	1	1.69
All of the above	4	6.78
Total	59	100

SP (Sulphadoxine/Pyrimethamine),
P (Pyrimethamine), CQ (Chloroquine)
Pro (Proguanil)

Table 3. Time of commencement of malaria chemoprophylaxis in pregnancy

Time	Frequency	Percentage (%)
At Booking	1	1.69
First Trimester	17	28.81
After 16 weeks	39	66.10
Third Trimester	0	0.00
No response	2	3.40
Total	59	100

Table 4. Chemoprophylactic agents and dosage

Agent used and dosage	Frequency	Percentage (%)
Pyrimethamine only	11	18.64
SP given twice at least 4 weeks apart	26	44.07
SP given every month	4	6.78
Proguanil 100mg daily	6	10.17
Proguanil 200mg daily	4	6.78
SP monthly +proguanil 200mg daily	1	1.69
Pyrimethamine 25mg weekly+proguanil100mg daily	2	3.40
IPT+proguanil 100mg+Pyrimethamine 25mg weekly	1	1.69
IPT + Proguanil 200mg daily	2	3.40
Proguanil 200mg weekly	1	1.69
No response	1	1.69
Total	59	100

IPT (Intermittent Preventive Treatment)

Discussion

While the awareness of malaria chemoprophylaxis in pregnancy is expectedly very high as all the respondents knew of it and administer the chemoprophylactic agents, it is disturbing that only 55.9% of general medical practitioners in Port Harcourt actually knew the current WHO recommended malaria chemoprophylactic agent in pregnancy- Sulfadoxine-Pyrimethamine. Regrettably, only 44% correctly prescribe this drug in terms timing, dosing and frequency in pregnancy in keeping with the findings in Enugu, south-eastern Nigeria.¹⁴ Although there was no similar study on general medical practitioners in some other regions in Nigeria to the authors' knowledge, the trend may be similar nationwide. This is particularly worrisome as malaria contributes significantly to maternal and perinatal morbidity and even mortality in our environment and a good proportion of our women receive antenatal care from the general practitioners. Concerted efforts must therefore be made by governments at all levels and relevant medical professional bodies in training and re-training of general medical practitioners to update their knowledge and practice of providing wholesome maternity care as this will contribute substantially to reducing our maternal mortality ratio.

The study further revealed that 84.6% of doctors aged 30 years and below knew the current WHO protocol while only 37.5% of those above 40 years knew it. This shows that the younger practitioners with

fewer years of practice are more conversant with the current protocol for malaria chemoprophylaxis in pregnancy than their older colleagues. This is not surprising as this teaching formed part of their medical curriculum and further brings to fore the need for re-training of doctors in line with the current WHO protocol.

More worrisome is the finding that some of our general practitioners still rely on pyrimethamine and proguanil either singly or in combination. These have practically been shown to be ineffective in malaria chemoprophylaxis because of widespread resistance of the offending malaria parasite^{9,15}. Other drug combinations used by some of these practitioners include sulphadoxine-pyrimethamine/pyrimethamine, sulphadoxine-pyrimethamine/proguanil/pyrimethamine and even chloroquine and others. This practice is clearly not recommended⁹ and should be strongly condemned.

Interestingly also is the revelation in this study that over 43% of the our primary care physicians do not know the WHO recommended timing and commencement of sulphadoxine-pyrimethamine chemoprophylaxis with a good number of them prescribing it in the first trimester when it could be potentially dangerous and fetotoxic⁹. Curiously none of the respondents prescribed SP in the third trimester when this could be safely given before the 36 weeks of pregnancy^{9,16}.

Some of the respondents who admitted having a protocol did not know which protocol they had,

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necessitating the need for provision of a standard protocol on malaria chemoprophylaxis in the various private clinics and hospitals, and this should be made known to the practitioners for strict adherence. This will prevent underutilisation of malaria chemoprophylaxis as noted in some developing countries like India¹⁷.

Training and re-training general medical practitioners and continuing medical education for all Practising doctors in Nigeria as recently advocated by the Medical and Dental Council of Nigeria will keep practising physicians abreast with the current and contemporary issues in medical practice in general and in malaria chemoprophylaxis in particular. This will go a long way in reducing the maternal and perinatal morbidity and mortality in Nigeria.

The relatively small number of respondents and poor retrieval rate and a one city design of the study are some of the limitations of this study. A more elaborate, state, regional or even nationwide study is advocated to validate the findings of this preliminary study.

Conclusion

The knowledge and practice of the WHO recommended malaria chemoprophylaxis in pregnancy among general medical practitioners is below average. Training and re-training, workshops, scientific conferences and continuing medical education for primary care physicians on the use of sulphadoxine-pyrimethamine will no doubt remarkably improve their knowledge and practice of this WHO recommended chemoprophylactic agent in pregnancy which will in turn reduce the malaria related perinatal and maternal morbidity and mortality.

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