# Malaria Chemoprophylaxis during Pregnancy: A Survey of Current Practice amongst Nigerian Obstetricians.

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**Abstract**
***Background:*** The need for an effective malaria chemoprophylaxis during pregnancy is well established. Suphadoxine-pyrimethamine is the drug currently being recommended by the World Health Organization for such a purpose.
***Objective:*** To determine the current practice of malaria prophylaxis amongst Nigerian obstetricians.
***Methods:*** A questionnaire survey of Nigerian obstetricians who attended the annual conference of the Society of Obstetrics and Gynaecology of Nigeria (SOGON), in Enugu in November 2001.
***Results:*** Ninety-one (60.7%) of the 150 people to whom the questionnaire was administered responded. Seventy-nine (86.8%) of the 91 respondents offered malaria chemoprophylaxis routinely to all their pregnant patients while the remaining 12 (13.2%) did not. The drugs the respondents administered for malaria chemoprophylaxis included chloroquine, pyrimethamine, proguanil, and sulphadoxine-pyrimethamine either singly or in various combinations. The majority of the respondents (31/79 = 39.2%) administered pyrimethamine alone while only 8 (10.1%) respondents administered the sulphadoxine-pyrimethamine currently recommended by the WHO.
***Conclusion:*** The practice of malaria chemoprophylaxis amongst Nigerian obstetricians lags behind current knowledge.

**Key Words:** Malaria, chemoprophylaxis, pregnancy, practice, Nigerian obstetricians

## Introduction

Malaria is currently recognised as the most common and potentially most serious infection occurring in pregnancy in many sub-Saharan African countries[1]. The greater susceptibility of pregnant women, especially primigravidae, to malaria is well documented[2, 3]. As many as half of all primigravidae, have been found to be parasitaemic at the first antenatal visit in some sub Saharan African countries[4]. Malaria parasitaemia, including subclinical cases are known to cause maternal anaemia, low birth weight and stillbirths [5]. Such resultant low birth weight is reported to be the most important risk factor for neonatal and early infant mortality[6]. Because of these adverse effects of malaria in pregnancy for mother and child, the World Health Organization (WHO) currently recommends a three-pronged approach viz: (a) intermittent preventive treatment (b) insecticide-treated bed nets and (c) case management of malaria illness for malaria prevention and control during pregnancy in malaria endemic areas[7]. Nigeria is an endemic area for malaria. We do not know to what extent this WHO recommendation is being implemented by Nigerian health care providers. Since obstetricians constitute a group that ought to practice the WHO recommendation better than other health professionals, the objective of this study was to determine the current practice of malaria chemo-prophylaxis during pregnancy amongst Nigerian obstetricians.

## Materials and Methods

A survey of Nigerian obstetricians who attended the annual general meeting of the Society of Obstetrics and Gynaecology of Nigeria (SOGON) in Enugu, south Eastern Nigeria, was conducted between 28th and 30th November 2001. Data were collected by means of semi-structured self-administered questionnaire. The questionnaire contained questions on respondents' bio-data and their current practices of malaria chemoprophylaxis, including the drugs used and their doses and frequency of administration as well as whether chemoprophylaxis was given to all pregnant women or to primigravidae only. The questionnaires were administered to all consenting participants of the conference. Data analysis was by simple percentages.

## Results

A total of 150 questionnaires were administered but 91 questionnaires were completed and returned giving a response rate of 60.7%. The respondents had practised for a mean of 8.2 ± 7.6 (range: 1-34) years. The age distribution of the respondents is shown in Table 1. Sixty-eight (74.8%) of the 91 respondents were aged 31 50 years. The numbers (%) of the respondents from the various geopolitical zones of Nigeria are shown in Table 2. It is noted that the majority of the respondents (38.5%) came from the South East geo-political zone of Nigeria.

Seventy-nine (86.8%) of the respondents offered malaria chemoprophylaxis routinely to all their pregnant patients while the remaining 12 (13.2%) did

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not. The types of malaria chemoprophylaxis offered by the 79 respondents who offered this routinely to their patients are shown in Table 2. All the 79 respondents start the chemoprophylaxis after the first trimester. The doses of the drugs administered and their frequencies were: pyrimethamine 25 mg weekly, chloroquine 500mg weekly, proguanil 100mg daily and sulphadoxine-pyrimethamine 3 tablets monthly. The 79 respondents were asked to estimate the percentage efficacy of the chemoprophylactic antimalarial they used separately for primigravidae and for multiparas. Thirty-five (44.3%) of the 79 respondents said they could not make an estimate while the remaining 44 respondents made an estimate. The mean estimated percentage efficacy of chemoprophylaxis was 55.8 ± 23.2% (range: 3-90) for primigravidae and 61.6 ± 25.1% (range: 15-90) for multigravidae. Forty-eight of the 79 respondents reported that the hospitals where they practised had a protocol for malaria chemoprophylaxis while this was not available for the remaining 31 respondents.

**Discussion**

Earlier attempts at malaria chemoprophylaxis in pregnancy in Nigeria recommended a therapeutic dose of chloroquine 600 mg base to clear the pre-existing malaria followed by pyrimethamine 25 mg weekly as prophylactic[8]. With the emergence of chloroquine resistance in the country, the World Health Organization recommended that the initial therapeutic dose of chloroquine be increased to 1500 mg. In the last two decades, the efficacy of chloroquine, proguanil and pyrimethamine have diminished markedly as a result of the emergence of multi-resistant strains of Plasmodium falciparum[9-11]. For this reason, the World Health Organization currently recommends intermittent preventive treatment of malaria during pregnancy with sulphadoxine-pyrimethamine after the first 16 weeks of pregnancy[7].

The findings in the present study that about one-tenth of Nigerian obstetricians surveyed do not routinely prescribe malaria chemoprophylactic agents during pregnancy and that the majority of them still rely on pyrimethamine, chloroquine and proguanil either singly or in combination, all of which have been shown to ineffective[9-11] is rather surprising. This might be because of their perceived efficacy of the drugs (56%), which is much lower than the 8 percent documented in randomized controlled trials[9]. It is clear from this study that the practice of malaria chemoprophylaxis among Nigerian obstetricians lags behind current knowledge. Moreover, available data indicate that resistance of malaria parasites to various drugs including the sulphadoxine-pyrimethamine may continue to be a problem in the future[1]. Since the issue is dynamic more research needs to be done to evaluate alternatives such as amodiaquine, artesunate, artemether and dapsone either singly or in various combinations. However, clinicians need to apply research results in their clinical practice.

It is concluded that the practice of malaria chemoprophylaxis among Nigerian obstetricians lags behind current knowledge.

Table 1:

**(a) The age distribution of the respondents**

| Age Range (years) | No | Percent |
|---|---|---|
| ≤ 30 | 6 | 6.6 |
| 31-40 | 41 | 45.1 |
| 41-50 | 27 | 29.7 |
| 51-60 | 8 | 8.8 |
| ≥ 61 | 9 | 9.9 |
| **Total** | **91** | **100.0** |

**(b) Distribution of the respondents according to the various geo-political regions of Nigeria**

| Geo-political Area | No | Percent |
|---|---|---|
| South East | 35 | 38.5 |
| South West | 12 | 13.2 |
| South South | 14 | 15.4 |
| North Central | 10 | 11.0 |
| North East | 11 | 12.1 |
| North West | 9 | 9.9 |
| **Total** | **91** | **100.0** |

Table 2:

**Malarial chemo-prophylactic agents used by Nigerian obstetricians**

| Drug(s) used for prophylaxis | Respondents using drug(s) | |
|---|---|---|
| | No | % |
| Pyrimethamine alone | 31 | 39.2 |
| Proguanil alone | 10 | 12.7 |
| Choloroquine followed by pyrimethamine | 6 | 7.6 |
| Chloroquine alone | 8 | 10.1 |
| Chloroquine followed by Sulphadoxine-pyrimethamine | 8 | 10.1 |
| Pyrimethamine plus proguanil | 10 | 12.7 |
| Sulphadoxine-pyrimethamine followed by pyrimethamine | 4 | 5.1 |
| Choroquine followed by proguanil | 2 | 2.5 |
| **Total** | **79** | **100.0** |

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