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Perception on the Use of Sulfadoxine-Pyrimethamine Tablets in the Treatment of Uncomplicated Malaria in Adult Malaria Patients Residing in Dar es Salaam

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A prospective study on assessment of perceived efficacy and side effects of sulfadoxine-pyrimethamine (SP) tablets in two hundred and twenty eight adult malaria patients in Dar es Salaam region was carried out shortly before the drug was introduced as a first line treatment for malaria in Tanzania. Sources and dispensing practices with SP in the private community pharmacies were also assessed. The study revealed that 80.3% of the patients were relieved from malaria symptoms and 19.7% did not feel any relief after using the drug. Further, the results showed that 39.5% of the patients did not experience side effects while 60.5% experienced them. Among the affected respondents 25.4% suffered from body malaise, 21.0% had diarrhoea, and 29.7% experienced nausea, vomiting and loss of appetite, 17.4% suffered headache and abdominal discomfort and 6.5% experienced inflammation of the lips. The results revealed that 60% of the patients obtained SP drugs from private community pharmacies without prescriptions while 40% obtained the drug with prescriptions. 83.2% of the patients obtained SP from them community pharmacies, 13.9% from government hospital pharmacies and 2.9% from home leftover medicine reserves.

Key Words: Malaria, sulfadoxine-pyrimethamine (SP), perception, effectiveness.

INTRODUCTION

Malaria is a major threat to public health worldwide [1]. One third of the world's population is exposed to the risk of malaria. Of the four *Plasmodium* species (*P. falciparum, P. ovale, P. vivax and P. malariae)*, the *P. falciparum* causes the most severe form of the disease with an estimated 300 to 500 million cases and 1.5 to 2.5 million deaths yearly [1]. Most deaths occur in sub-Saharan Africa and children under the age of five are at the highest risk. In Tanzania, malaria is ranked as the number one cause of morbidity and mortality and the trend is increasing every year. Chemotherapy remains the basis for effective case management of malaria and reduction of deaths. The availability and rational use of antimalarial drugs is important for appropriate malaria treatment. Unfortunately, wide-spread global drug resistance to chloroquine and increasing resistance to other antimalarials such as quinine, mefloquine and, to a lesser extent amodiaquine, is alarming [2,3,4]. Many sub-Sahara African countries have recently changed their malaria treatment policies by replacing chloroquine (CQ) with SP as the first line drug after high treatment failure of CQ [5,6]. In Tanzania, for instance, chloroquine resistance was first reported in 1982 and is now rampant all over the country [7, 8]. Unfortunately there are already reports on SP resistance in Tanzania and other countries in the tropics [8,9]. Currently, resistance to SP in Tanzania is of a magnitude less than 15% [8]. The World Health Organization (WHO) provides guidelines to assist member countries in deciding the timing of change of first line drug for malaria treatment [5]. When failure rates of the first line drug reach within the range of 16-24% a country should undertake active change of drug protocol. WHO recommends changes of the first line drug when the failure rates reach beyond 24%. Tanzania and other neighboring countries like Malawi, Uganda, Kenya, Zimbabwe and Zambia are now using SP as first line drug for

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acute uncomplicated malaria [5,10]. However, there are reports of negative attitudes on SP among many people in Tanzania because the drug does not lower fever as CQ does and it is said to be a cause of many dangerous reactions in patients [11,12]. There is a tendency among patients to believe that SP can cause as much harm to everyone as it was previously reported in some patients who experienced serious and irreversible skin reactions (Steven-Johnson Syndrome) after treatment with SP [12]. The problem is exacerbated by the fact that a complete dose of CQ is much cheaper than SP [13]. There is also a tendency among patients to accept the changes with skepticism (personal communication). We therefore wanted to know the acceptability of SP among Dar es Salaam residents despite the negative peer information against the drug. We report the findings on the perception of effectiveness of SP among Dar es Salaam residents. The study was based in adult malaria patients in Dar es Salaam who attended private pharmacies to seek treatment. The study also assessed the sources of the drug in the community and its dispensing in private pharmacies.

METHODOLGY

Study area

The study was conducted in private community pharmacies in Dar es Salaam region from January to June 2001. Dar es Salaam was chosen due to the big population with good income and therefore could easily afford SP in private pharmacies. It was also easier for the research assistants to collect data in Dar es Salaam due to good transport network.

Study population

The study population consisted of 107 male and 121 female adult patients who visited the pharmacies to purchase sulfadoxine-pyrimethamine (SP) tablets. The research assistants randomly interviewed the adult patients who entered the pharmacies and purchased SP for their own use either with a prescription or for self-medication. A total of 228 patients were interviewed using structured questionnaires containing open-ended and closed questions. Only adult patients between 18-60 years of age were included in the study due to their ability to understand and respond well to the questions posed by the research assistants.

Data collection

Informed consent to participate in the study was sought from the patients. Data was collected by observations and using structured questionnaires. Questionnaires (translated into Swahili language) were randomly handed to the respondents who were asked to complete them. The information required included sex of respondents, how often the patient suffered from malaria prior use of SP, perceived effectiveness, side effects and dispensing practices of SP. The questionnaires had a provision of a feed back report on perceived effectiveness and side effects 4-5 days after drug administration. All 228 respondents gave for a feed back report.

RESULTS

Of the 228 patients interviewed, all agreed to having suffered from malaria before. Among all patients interviewed, 147 had used SP before. Table 1 shows the number of patients who gave a feedback report on perceived effectiveness of SP. Significantly, these results suggested that the drug is perceived as effective in the treatment of uncomplicated malaria in adults ($P<0.1$). Further, results indicated that 138 patients reported to have suffered some side effects after using SP. Out of these, 91 were females and 47 were males. Table 2 shows the different types of side effects and their frequencies. Furthermore, the study revealed that 89 patients bought the drug on prescription and 139 patients could buy it without prescription. The results obtained also showed that, 189 patients purchased the drug from community pharmacies, 32 obtained it from government hospital pharmacies and 7 obtained it from leftover medicines reserves in their homes.

Table 1: Perceived effectiveness of sulfadoxine/ pyrimethamine (SP) tablets.

Perceived effectiveness (N=228)			
	Females	Males	Total
Cured from malaria	94(41.3%)	89(39.0%)	183(80.3%)
Never cured from malaria	27(11.8%)	18(7.9%)	45(19.7%)
Total	**121(53.1%)**	**107(46.9%)**	**228(100%)**

Table 2: Side effects experienced by patients who took sulfadoxine/pyrimethamine (SP) tablets. (N=138)

Side effect	Frequency	Percentage
Body malaise	35	25.4
Diarrhoea	29	21.0
Nausea, vomiting, loss of appetite	41	29.7
Headache and abdominal pain	24	17.4
Inflammation of the lips	9	6.5
Total	**138**	**100**

DISCUSSION

This study shows that more than 50% of the respondents agreed to have had used SP Before. Sixty percent obtained it from the community pharmacies on prescriptions and 40% without prescriptions. A study on antimalarial drug prescribing in Dar es Salaam region reported SP to be among the drugs normally prescribed as an alternative to chloroquine [14]. In Tanzania, SP in conjunction with quinine has been in use as the second line drug in the treatment of complicated malaria for more than 10 years [15]. In this study, 80.3% of respondents reported having been relieved from malaria symptoms after using SP. This is in agreement with decisions made by the government to make SP as the first line drug [8]. Efficacy studies conducted in Kigoma, Tanzania, and other parts of East Africa have shown that SP an effective antimalarial [9,16,17]. However, the long experience of the antipyretic effect of CQ, that is lacking in SP will likely hinder acceptance of SP for wide use as first-line drug [13]. In this study we established that 60.5% of respondents experienced some side effects ranging from malaise, diarrhoea, nausea, vomiting, headache and abdominal pain. These effects are common to many other drugs and disappear gradually even without special treatments. Serious adverse reactions associated with SP usage have been reported in some patients who used SP [18,19]. In our study, only 6.5% of affected respondents reported to have suffered from the inflammation of lips. This reaction calls for more attention since it can be an indication of a serious reaction associated with the adverse reactions of the sulfur containing drugs [8]. The results further show that 83.2% of the interviewed patients got the drug from private community pharmacies and only 13.9% obtained it from government hospital pharmacies. Nevertheless 2.9% obtained the drug from their home leftover medicine reserves. Private pharmacies should be supported by the government by giving more training to their staff and monitoring all the pharmaceutical activities in these establishment for the purpose of ensuring safety and efficacy of the dispensed drugs. Use of home leftover antimalarials should be discouraged since this may facilitate an irrational use of drugs that might promote the emergency and spread of antimalarial drug-resistance [20]. Public health education could play a big role on sensitizing the community members on the disadvantages of irrational use of drugs [21].

CONCLUSION

This study shows that sulfadoxine-pyrimethamine is perceived as an effective antimalarial drug among Dar es Salaam residents despite misinformation about the drug. The drug should therefore be made available at all health facility levels. People should be educated on the need to trust Government decisions on policy changes.

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