



Awareness of National Malaria Management Guidelines Among House Officers in Khartoum State Teaching Hospitals. Sudan 2018

Mohammed Altyb Alshykh Aboshanab^{1*}, Mohammed Altayeb AbdAlhafeez Mohammed¹, Mohamed Elzubair Mohamed Ataelmanan¹, Mohammed Alsheekh Alaqbash¹, Muhsin Mohammed Elhadi Agbna Mohammed¹, Mohamed Mustafa Mohamed Albshir¹, Shiemaa Emad Abdelrahim Babiker², Nagla Abdelrahim Mohamed Ahmed³

¹MBBS, Alzaiem Alazhari University, Sudan

²MBBS, Omdurman Islamic University, Sudan

³Associated Professor at Alzaiem Alazhari University Faculty of Medicine
Department of Community Medicine, Sudan

*Corresponding Author: Mohammed Altyb Alshykh Aboshanab, MBBS, Alzaiem Alazhari University, Sudan.

DOI: 10.31080/ASMS.2024.08.1818

Received: April 25, 2024

Published: May 07, 2024

© All rights are reserved by Mohammed Altyb Alshykh Aboshanab, *et al.*

Abstract

Background: Malaria is a protozoan disease which can lead to serious complications if not treated early and correctly. The aim of this study to assess the knowledge about malaria management guidelines among house officers.

Methods: This is the cross-sectional observational study conducted at 6 of Khartoum teaching hospitals

Results: The study showed that among the 115 participants evaluated there were 70.4% females and 29.6% were males. 94.8% of participants knew there are malaria management guidelines and 5.2% didn't know about the presence of these guidelines, 58.3% have some information and 10.4% just hear about these guidelines. 89.6% knew the management of simple malaria is outpatient management. 65.2% of the participants were aware of where to manage the cases of complicated malaria (inpatient or in ICU). 27.8% of the participants were aware of the management of simple malaria in the second and third trimester.

Conclusion: Different levels of awareness about malaria management guidelines as a whole: 4.3% had an overall poor level of awareness, and 74.8% had an overall average level of awareness and 20.9% had an overall good level of awareness.

Keywords: Malaria; Management; Guidelines; House Officers

Abbreviations

ACT: Artesunate Combined Therapy; AL: Artemether-lumefantrine; AS: Artesunate; DHA: Dihydroartemisinin; EMT: Emergency Medical Technician; ECG: Electrocardiogram; EU: Europe; G6PD: Glucose 6 Phosphate Dehydrogenase; HIV: Human

Immunodeficiency Virus; IM: Intramuscular; IV: Intravenous; KAP: Knowledge Attitude and Practice; MQ: Mefloquine; NHS: National Health Service; P: Plasmodium; PPQ: Piperaquine; RBC: Red Blood Cells; RDT: Rapid Diagnostic Test; SP: Sulfadoxine – Pyrimethamine; SPSS: Statistical Package of Social Sciences; UK: United Kingdom; WHO: World Health Organization

Introduction

The aims of medical guideline are guiding decisions and criteria in treatment of specific areas of healthcare regarding diagnosis, management. Such guidelines have been use during the entire history of medicine for thousands of years [1]. It recommend specific care for people with specific conditions and determine how healthcare professionals should deal with it [2].

Malaria is a protozoan disease transmitted by the bite of infected Anopheles mosquitoes by plasmodium parasites. The species of plasmodium [3] are *P. falciparum*, *P. vivax*, *P. ovale*, and *P. malariae* and almost all deaths are caused by falciparum malaria [4]. The clinical features are headache, malaise, hepatosplenomegaly, anemia and vomiting. Jaundice is common due to hemolysis. The clinical features of malaria are non-specific and the diagnosis must be suspected in anyone returning from an endemic area who has features of infection. The risk of severe malaria. *P. vivax* and *P. ovale* increase with previous splenectomy [5]. All patients with suspected malaria should be treated on the basis of a confirmed diagnosis by microscopy examination or RDT testing of a blood sample. High specificity will reduce unnecessary treatment with antimalarial drugs and improve the diagnosis of other febrile illnesses in all setting [6]. The management of malaria based on the severity if it is simple malaria treated by Artemether + lumefantrine according to WHO guidelines [6]. If it is complicated malaria the patient must be hospitalized and treated with artesunate IV quinine IV [7]. During pregnancy the treatment is different according to severity and the trimester. In first trimester if it is simple malaria treated by Quinine plus clindamycin or quinine monotherapy. In second trimester treated by Artemether + lumefantrine or any one from ACT drugs group or artesunate plus clindamycin or quinine. If it is complicated malaria in all trimester treated by artesunate or quinine [8].

The aim of this study to assess the house officers knowledge about malaria management guidelines.

Methods

This is a cross-sectional observational study was conducted at 6 of Khartoum state teaching hospitals are chosen which include Khartoum Bahri teaching hospital, Ahmed Gassim teaching hospital, Haj Al Safi teaching hospital, EL ban Gadeed teaching

hospital, Ibrahim Malik teaching hospital, and EL Academe teaching hospital. Include 115 participants distributed at the year of 2018. The Inclusion criteria are House officers distributed during the mentioned period and completed or currently enrolled in the internal medicine shift. Excluded those who didn't complete or not currently enrolled in the internal medicine shift and those who are registered outside the time period mentioned. Those who refuse to participate. The data were collected by a structured questionnaire, self-administered using WHO 2015 as guidelines for malaria management. The data were categorized and analyzed using IBM SPSS statistics 20.

Results

The study showed that among the 115 participants evaluated there were 70.4% females and 29.6% were males. 99.1% are aged 20-29 and only 0.9% are aged 30-39. The most common source was medical school 54.8% and the head of the medical unit 36.5% (Table 1). We targeted the Khartoum teaching hospitals where 22.6% of participants were from Khartoum Bahri teaching hospital, 25.2% from Ibrahim Malik teaching hospital, 18.3% from Ahmed Gassim, teaching hospital, 15.7% from El academe teaching hospital, 11.3% from Haj Alsafi teaching hospital and 7% from El ban Gadeed teaching hospital (Table 2). 94.8% of participants knew there are malaria management guidelines and 5.2% didn't know about the presence of this guidelines, 58.3% have some information and 10.4% just hear about this guidelines (Table 3). 89.6% knew the management of simple malaria is outpatient management. 71.3% knew the first line of treatment (lumefantrine + artemether) and only 33% of them knew the second line for the management of simple malaria (Table 4). 65.2% of the participants were aware of where to manage the cases of complicated malaria (inpatient or in ICU) and 74.8% knew the treatment of complicated malaria (Table 5). 71.3% knew the first line of management of malaria in the first trimester (oral quinine). Only 27.8% of the participants were aware of the management of simple malaria in the second and third trimester. 83.5% knew the management of complicated malaria during pregnancy. 36.5% knew the treatment of malaria caused by plasmodium vivax and ovale (Table 6).

Variables	Frequency N = 115	Percent
Female	81	70.4%
Male	34	29.6%
Age		
20-29 years	114	99.1%
30-39 years	1	0.9%
Source of information		
College	63	54.8%
Workshop	33	28.7%
Head of the medical unit	42	36.5%
Internet	23	20%
Colleagues	28	24.3%

Table 1: This table shows the gender, age of participants and the Source of the information about the malaria guidelines.

Hospital's name	Frequency N = 115	Percent
AHMED GASSIM, TEACHING HOSPITAL	21	18.3
EL ACADEME TEACHING HOSPITAL	18	15.7
EL BAN GADEED TEACHING HOSPITAL	8	7.0
HAJ ALSAFI TEACHING HOSPITAL	13	11.3
IBRAHIM MALIK TEACHING HOSPITAL	29	25.2
KHARTOUM BAHRI TEACHING HOSPITAL	26	22.6

Table 2: This table shows the Khartoum teaching hospitals where the data have been collected.

Variables	Frequency N = 115	Percent
NO presence of malaria guidelines	6	5.2%
Presence of malaria guidelines	109	94.8%
Good information about it.	36	31.3%
Some information about it.	67	58.3%
Just hear about it but I have no idea.	12	10.4%

Table 3: This table shows awareness about the presence of malaria management guidelines.

Variables	Frequency (N = 115)	Percent
Outpatient management of simple malaria	103	89.6
Inpatient management of simple malaria	12	10.4
The first line of treatment for simple malaria:		
A. Quinine	11	9.6
B. lumefantrine	12	10.4
C. lumefantrine + artemether	82	71.3
D. IV artesunate.	10	8.7
The second line of treatment for simple malaria		
A. Dihydroartemisinin + piperazine or Quinine	38	33.0
B. sulfadoxine-pyrimethamine + artesunate	34	29.6
C. Co-artemether	15	13.0
D. IV artesunate	28	24.3

Table 4: This table shows awareness about the management of simple malaria.

Variables	Frequency N = 115	Percent
A. Outpatient	6	5.2
B. Inpatient.	29	25.2
C. ICU	5	4.3
D. inpatient or ICU	75	65.2
Treatment of complicated malaria		
A. Artemether IM	17	14.8
B. Quinine IV or artesunate IV	86	74.8
C. sulfadoxine-pyrimethamine + artesunate	3	2.6
D. Co-artemether	9	7.8

Table 5: This table shows awareness about the management of complicated malaria.

Variables	Frequency N = 115	Percent
Treatment of simple malaria in the first trimester		
A. Artesunate	18	15.7
B. Sulfadoxine-pyrimethamine + artesunate.	7	6.1
C. oral Quinine	82	71.3
D. Co-artemether.	8	7.0
Treatment of simple malaria in the second and third trimester		
A. Artemether + lumefantrine	15	13.0
B. Artesunate.	17	14.8
C. Quinine.	51	44.3
D. All of these drugs	32	27.8
Treatment of complicated malaria in all trimester		
A. Quinine or Artesunate	96	83.5
B. Dihydroartemisinin + piperaquine	6	5.2
C. Sulfadoxine-pyrimethamine + artesunate.	6	5.2
D. Artemether + lumefantrine.	7	6.1
Treatment of malaria caused by <i>P. vivax</i> and <i>P. ovale</i>		
A. Artesunate IV or IM.	4	3.5
B. Quinine.	17	14.8
C. Primaquine.	52	45.2
D. Artemether + lumefantrine after that Primaquine.	42	36.5

Table 6: This table shows the awareness about the management of malaria in pregnancy, and the management of malaria caused by *P. vivax* and *P. ovale*.

The level of awareness of the participants; 4.3% had an overall poor level of awareness “answered less than one third of the questions correctly”, and 74.8% had an overall average level of awareness “answered more than one third of the questions correctly” and 20.9% had an overall good level of awareness “answered more than two thirds of the questions correctly” (Table 7).

Level	Frequency N = 115	Percent
Poor level	5	4.3
Average level	86	74.8
Good level	24	20.9

Table 7: This table shows the level of awareness.

Discussion

The implementation of a national drug policy faces several constraints, such as the logistics of distribution, the large number and variety of people and institutions involved and the rising cost of treatment. Appropriate planning is therefore essential for successful implementation. In this study, some constraints and problems were highlighted which reflect on the implementation of the protocol for national malaria control [9].

The study showed that among the 115 participants evaluated there were 70.4 females, 29.6 males and almost of all of them were aged 20-29 years and the levels of awareness about malaria management guidelines as whole was as follows: 4.3% had an overall poor level of awareness, 74.8% had an overall average level of awareness and 20.9% had an overall good level of awareness. Which means 95.3% have an accepted level of awareness about malaria management guidelines in contrast to another study which the level of awareness of house officers about the malaria management guidelines was only 37.9% that because the Khartoum state contain a lot of hospitals and it contain a lot of house officers [9].

The weakest point in the awareness was the second line of treatment of simple malaria, management of malaria during second and third pregnancy and management of malaria caused by vivax and ovale species of malaria most probably due to the poor exposure of fresh doctors like the house officers to the fairly uncommon situations. Aware of the management of simple malaria in the second and third trimester.

Conclusion

Different levels of awareness about malaria management guidelines as a whole: 4.3% had an overall poor level of awareness, and 74.8% had an overall average level of awareness and 20.9% had an overall good level of awareness.

Ethical Consideration

The ethics committee at each hospital was notified and permission was taken, each participant was asked for verbal consent before participating and all conflicts were discussed.

Funding

This study was not received any financial supports.

Conflict of Interest

No one of authors has a conflict of interest.

Acknowledgements

Thanks to Nagla Abdelrahim Mohamed Ahmed Community Medicine Department, faculty of medicine- university of AL Zaiem Al azhari University for her support and supervision of us in our study and to all helped us to accomplish this works and to our families and friends for their continued support.

Limitation

Small sample size due to refusal of the Sudan medical council to provide us with the statistics about the registered house officers we were select 115 house officers as sample size which we only think it will be representative with a total of which was distributed among the 6 hospitals.

Bibliography

1. JAKO S., *et al.* "Towards evidence-based clinical practice: an international survey of 18 clinical guideline programs". *International Journal for Quality in Health Care* 15 (2003): 31-45.
2. Steven H and Woolft RG. "Allen Hutchinson, Martin Eccles and Jeremy Grimshaw, Potential benefits, limitations, and harms of clinical guidelines". 318.7182 (1999): 527-530.
3. Wikipedia. medical protocols. 3 January (2018).
4. Harrison, malaria, in Harrison principles of internal medicine. The McGraw-Hill Companies, Inc. (2010): 1077-1078.
5. Davidson., malaria, in Davidson principles and practice of medicine (2014): 355-357.
6. WHO, Guidelines for the treatment of malaria. WHO Library (2015): 27,32-34,59,72.

7. Veronique grouzard JR. "Marianne Sutton, malaria management, in clinical guidelines diagnosis and treatment manual". *Medecins San Frontieres* (2016): 141.
8. WHO, WHO Guidance for Prevention and Treatment of Malaria in Pregnancy, in Treatment of Malaria in Pregnancy (2010): 2-3.
9. Yousif MEAaMA. "Impact of the national protocol for malaria treatment on prescribing patterns in Gezira state, Sudan". *Mediterranean Health Journal* 10 (2004): 566-57210.