



**AMREF DIRECTORATE OF LEARNING SYSTEMS
DISTANCE EDUCATION COURSES**

**MALARIA MANAGEMENT, PREVENTION
AND CONTROL**

**UNIT 6
Referral in Severe and Complicated Malaria**



**Allan and Nesta
Ferguson Trust**

Unit 6: Referral in Severe and Complicated Malaria

A distance learning course of the Directorate of Learning Systems (AMREF)

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Unit 6: Referral in Severe and Complicated Malaria

INTRODUCTION

Welcome to Unit 6 in which we shall discuss the referral of patients with severe and complicated Malaria at all the levels of our health system. In our last unit we learnt about treatment defaults in treatment of Malaria. We hope you are now well equipped to prevent treatment failures and errors. While going through this unit we recommend that you try to relate the information given to your working conditions and derive some examples from your practice.

LEARNING OBJECTIVES

By the end of this unit you should be able to:

- Describe indications for referral of patients with severe and complicated Malaria at various peripheral health units;
- Explain criteria for the referral of patients with Malaria to hospital;
- Outline the management of referred patients.

6.1 Indications for Referral in Malaria.

The management of malaria at the peripheral level should be supported by referral facilities to treat complicated and non-responsive Malaria cases.

Before you read on do Activity 1, it should take you about 5 minutes to complete.



ACTIVITY 1

1. Have you ever referred a patient with Malaria to hospital?

Yes No

2. If yes, for what reasons did you refer him/her?

The following are some of the reasons or indications why patients are referred to hospital.

- **Non – Response to Antimalarial drugs.**

There are various reasons why a person may fail to respond to Chloroquine and other antimalarial drugs. These include:

- Inadequate treatment whereby the patient fails to take the full course of treatment as prescribed;
- A patient who has vomiting during treatment;
- Poor quality of drugs;
- The parasites may be resistant to the drug;
- The patient may have fever from another cause other than Malaria.

Therefore every time the patient returns with continuing symptoms following treatment with antimalarial drugs, it does not always mean that the parasite is resistant. You should confirm Malaria diagnosis by blood film and exclude other possible causes of treatment failure before proceeding to change treatment.

If laboratory facilities are not available and the patient's condition is worse than when initially seen, start the patient on 2nd line antimalarial drug and refer to the facility where laboratory diagnosis is possible.

As far as possible, you should follow up all malaria cases. Those who do not respond to standard antimalarial treatment should be referred to a higher level facility for further investigations, appropriate treatment and management.

- **Resistance of *P. falciparum* to antimalarial drugs.**

Drug resistance in malaria is defined as the ability of the parasite to survive and/or multiply despite the administration and absorption of a drug given in doses equal to or higher than those usually recommended, but within the limits of tolerance of the patient. The active drug against the parasite must gain access to the parasite or the infected red blood cell for the duration needed for it to take action.

In Africa, most cases of *P. falciparum* are no longer sensitive to chloroquine and fansidar.

In simple terms, resistance to *P. falciparum* means that a patient who has these malaria parasites has:

- been given the correct antimalarial drugs;
- in the correct doses;
- the antimalarial has been absorbed;

and still the parasites have not been killed or eliminated.

Due to the high levels of resistance it has now been recommended that monotherapy should no longer be used in the treatment of malaria. It has now been recommended that a combination of two antimalarial drugs should be used and especially those containing Artemisinin derivatives (Artemisinin Combined Therapy (ACT)).

The first line drug combination in Kenya, Uganda and Tanzania is Artemether/Lumefantrine (COARTEM^R) which is a fixed dose combination.

Other first line drug combinations in other countries are Chloroquine and Fansidar (SP) or amodiaquine and Fansidar, while the second line drug is oral quinine. Drugs which have been reserved by the World Health Organization (WHO) include ARTEMETHER, HALOFANTRINE, MEFLOROQUINE and others.

However, before giving 2nd line drug or reserved drugs, you must always try to exclude other possible causes of drug failure as outlined in Unit 5.

The availability of 2nd line drug and some reserved drugs at only specific health facilities (Health Centers and Hospitals) minimizes their misuse. Uncontrolled use of these drugs is believed to enhance the development and spread of resistance.

The other factors that contribute to the development of drug resistance is the use of sub-curative and incomplete drug regimen. Therefore the most reliable way of avoiding development of drug resistance is the administration of drug doses that are most likely to eliminate the parasite completely.



EVERY EFFORT SHOULD BE MADE TO ENSURE THAT A PATIENT TAKES THE FULL COURSE OF AN EFFECTIVE TREATMENT.

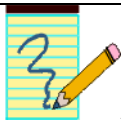
Refer every patient with severe complicated Malaria to hospital whenever possible.

6.2 Criteria for Referral to Hospital

As we have mentioned time and time again, patients with severe and complicated malaria must be referred to a facility where they can be properly managed. Usually referral takes place within the following levels of our health system:

- the community to level I (Dispensary);
- or level II (Health Centre) ;
- or final level (Hospital).

Before you read on, do Activity 2, it should take you 5 minutes to complete.



ACTIVITY 2

What danger signs in Malaria patient would make you refer him or her from the community to a hospital?

As you well know, the community is a catchment area for many diseases including Malaria. If you recognize any of the following danger signs at the community level you should refer the person to hospital. These are:

- Altered or decreased level of consciousness. e.g. confusion, delirium, and coma;
- Convulsions;
- Persistent convulsions, this may be a neurological manifestation;
- Hyperpyrexia of temperatures 39.5°C or higher with dry skin;
- Spontaneous bleeding as in epistaxis, bleeding gums, bleeding orifices;
- Pregnancy with fever;
- Poor feeding and excessive sleepiness;

6.2.1 At Level I (Health Centre)

At this level, you should assess for the following signs and use these signs as reasons for referral to hospital:

- Any of the signs recognized at community level;
- Jaundice, that is, yellow coloration of the eyes and mucous membranes;
- Failure to respond to treatment in 3 days.

6.2.2 At Health Centre II (Sub-District Hospital)

At this level, you should recognize:

- Any of the all signs in the community and health centre I above;
- Hypothermia (temperature of 35.5° C or below);
- Severe anemia;
- Hyperparasitaemia;
- Pulmonary oedema;
- Shock, that is, circulatory collapse;
- Haemoglobinuria which presents with dark colored or coca cola colored urine;
- Reaction to drugs;
- Condition that can not be managed locally, e.g. severe dehydration etc;
- Renal failure.

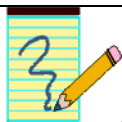
6.2.3 Referral from Intermediate Level III and IV (Health Centre and Sub-District Hospital) to the District or provincial hospital

The criteria for referring patients with severe malaria from the community or level 3 and 4 to a hospital should be based on the following signs:

- Difficulty in talking, sitting up, standing or walking without obvious cause;
- Unexplained heavy bleeding from any orifice;
- Passage of little or no urine;
- Passage of dark colored urine;
- A change in behavior, confusion or drowsiness;
- Altered consciousness or coma.
- Convulsions;
- Jaundice with or without severe anemia;
- Circulatory collapse or shock, this is also called Algid Malaria;
- Difficulty in breathing, as occurs in pulmonary oedema.

Having learnt the criteria for referring patients with severe and complicated Malaria, let us now learn about the management of referred patients.

Before you read on, do Activity 3, it should take you 5 minutes to complete.



ACTIVITY 3

Assume that you are charged with the responsibility of referring patient to a higher health facility. What should be done to patients with severe and complicated malaria before referral?

Confirm your answer as you read the following discussion.

The treatment of patients with severe and complicated malaria should begin in the health centre/dispensary while they wait for referral. This makes sure that you do not delay life-saving therapy. The treatment of choice for severe malaria is parenteral quinine.

6.2.4 Referral Formalities

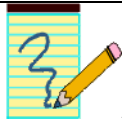
When sending the patient remember to accompany them with the following:

- a clear letter or referral form about the clinical picture, including dosages, times and route of administration for any medications given;
- the CSF specimen;
- the blood films;
- potential blood donors;
- a guardian if the patient is a child, the child should be kept lying down on their side during the journey;
- a staff member with the patient.

6.3 Management of Referred Patients

The management of referrals means receiving and treating the patient at the health facility to which the patient has been referred.

Before you read on do Activity 4, it should take you 5 minutes to complete.



ACTIVITY

You are the one receiving patients who have been referred to your hospital. What should be done to a patient with severe and complicated malaria on arrival to a referral facility?

Confirm your answer as you read the following discussion.

Often, the management of patients referred with severe and complicated malaria is done at the hospital level. This is because it is here that there are adequate facilities and qualified medical personnel to manage severe and complicated malaria. At this level, the following is undertaken

- Parenteral antimalarial therapy;
- Maintenance of proper fluid balance;
- Laboratory confirmation and monitoring of malaria parasitaemia;
- A lumbar puncture to differentiate cerebral malaria from Meningitis;
- Biochemical tests to monitor electrolytes;
- Blood transfusion if necessary with safe blood products;



- The levels outlined are not rigid referral sequences. If the patient's condition is serious refer directly to the level of maximum care.
- You should recognize severe and complicated malaria as early as possible and institute correct treatment as a matter of urgency.

CONCLUSION

We have now come to the end of this unit. In this unit we learnt about the referral of patients with severe and complicated Malaria. We noted the signs to look out for at each level of our health system in order to make a decision on referral. We also emphasized the importance of early and prompt diagnosis of severe and complicated malaria and institution of correct treatment.

You should now review the learning objectives at the beginning of this unit to see if you have achieved all of them. If there are any you are not sure about, go back to the relevant section and read it again. If you feel that you have learnt the work of this unit complete the attached assignment and remember to carry out the activities in your things to do list.

Practical Assignment

1. Study a referral form.
2. Fill out one form for a patient whom you have assessed to have severe and complicated Malaria.

Send the completed form to your tutor.

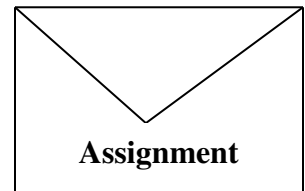


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**DISTANCE LEARNING COURSE ON MALARIA
Tutor Marked Assignment
Unit 6: Referral in Severe and Complicated Malaria**

1. List at least (3) categories of patients suffering from Malaria that you should always refer.

(i)

.....

(ii)

.....

(iii)

.....

2. List down 17 danger signs which would form the basis of your decision to refer a patient with severe and complicated Malaria to hospital.

- (i)
- (ii)
- (iii)
- (iv)
- (v)
- (vi)
- (vii)
- (viii)
- (ix)
- (x)
- (xi)
- (xii)
- (xiii)
- (xiv)
- (xv)
- (xvi)
- (xvii)

3 List down the six action points you should do when referring a patient to a higher level health facility

- i)
- ii)
- iii)
- iv)
- v)
- vi)

4. Outline the actions you would take when receiving a referred patient.
- i)
 - ii)
 - iii)
 - iv)

Congratulations! You have come to the end of this assignment. If you have experienced any problems with the content of this unit please write them down and attach them to this assignment. We shall be happy to give you relevant responses to enable you cope with the course. Send them or bring them in person to AMREF. Do not forget to write your student number.