Training Module for ASHAs on Malariology

डा. ए. सं. धारीवाल
निदेशक
Dr. A.C. Dhariwal
Director

Tel. 91-11-23918576
Fax : 91-11-23968329
E-mail : nvbdcp-mohfw@nic.in

भारत सरकार
राष्ट्रीय वैक्टर जनित रोग नियंत्रण कार्यक्रम
(स्वास्थ्य सेवा महानिदेशालय)
स्वास्थ्य एवं परिवार कल्याण मन्त्रालय
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(Directorate General of Health Services)
Ministry of Health & Family Welfare
22-SHAM NATH MARG, DELHI-110054

Foreword

Malaria remains a major public health concern in India. About 80% of malaria reported in the country is confined to tribal, hilly, difficult and inaccessible areas. The north – eastern states having such geographical setting and approximately 4 per cent of country's population contribute 10 to 12 per cent of total malaria cases every year. Towards strengthening the national response for malaria, an intensified Malaria Control Project – II (IMCP – II) supported by the Global Fund to fight AIDS. Tuberculosis and Malaria (GFATM) Round 9 grant is being implemented by the National Vector Borne Diseases Control Programme (NVBDCP) of Government of India and other malaria endemic states supported by GOI under DBS. A non-government consortium led by Caritas India is complementing the efforts of the NVBDCP in selected areas in the North Eastern states.

Similarly, the Central and Eastern Malaria Endemic States were covered under the World Bank supported National Vector Borne Diseases Control Support Project (NVBDCSP) covering 9 states namely, Andhra Pradesh, Chhattisgarh, Jharkhand, Madhya Pradesh, Gujarat, Odisha, Karnataka, Maharashtra and West Bengal. Now, they are supported by the domestic budget.

In view of early diagnosis of both Pv and Pf malaria, the country has introduced bivalent RDTs in whole of the country from 2012. Further, anticipating the threat of SP-ACT combination drug used for treating Pf malaria, the Technical Advisory Committee has approved use of ACT –AL for all north east states which has been introduced in 2014.For effective program implementation, it is imperative that all malaria workers should be trained in the use of both bivalent RDT and ACT-AL.

For effective capacity building of the people, a comprehensive module is essential to facilitate both the trainees and trainers. This present module is one such component for training the grass root malaria workers (ASHA/MPW/CHV/ANM/SWs). I wish to thank my officers namely Dr.G.S.Sonal, Additional Director and HOD Malaria Division, Dr. Avdhesh Kumar, Additional Director and Nodal Officer GFATM Project, Dr. Munish Joshi, National Consultant (training), Dr. H.G.Thakor, National Consultant (M & E) and Mr. Atul Kumar, Statistician for their sincere efforts to bring this module. I hope that this will go a long way in helping the trainees to understand the subject and thus prove to be effective implementation personnel foe the malaria control programme.

I wish the trainees a successful training and fruitful activities in the field so as to achieve the goals for malaria control and finally elimination.

With best wishes.

Date : 17th April, 2014
Place : Delhi

Dhariwal

(Dr.A.C.Dhariwal)

ABBREVIATIONS USED In The Module

ACT	*Artemisinin-based Combination Therapy*
API	*Annual Parasite Incidence*
ASHA	*Accredited Social Health Activist*
CHV	*Community Health Volunteer*
DMO	*District Malaria Officer*
FEFO	*First Expiry First out*
LT	*Laboratory Technician*
NVBDCP	*National Vector Borne Disease Control Programme*
Pf	*Plasmodium falciparum*
PHC	*Primary Health Center*
Pv	*Plasmodium vivax*
RDK	*Rapid Diagnostic test Kits*
RDT	*Rapid Diagnostic Test*
SPR	*Slide Positivity Rate*
SRL	*State Reference Laboratory*
TS-VBD	*Technical supervisor-VBD*

CONTENTS

Chapter-1

Instruction to use Bi-Valent RDT & Microscopy

Malaria usually occurs after the rains, when mosquitoes breed in water collections. Malaria can affect all age groups. It is important to diagnose and treat Malaria according to guidelines. The following instructions should be followed:

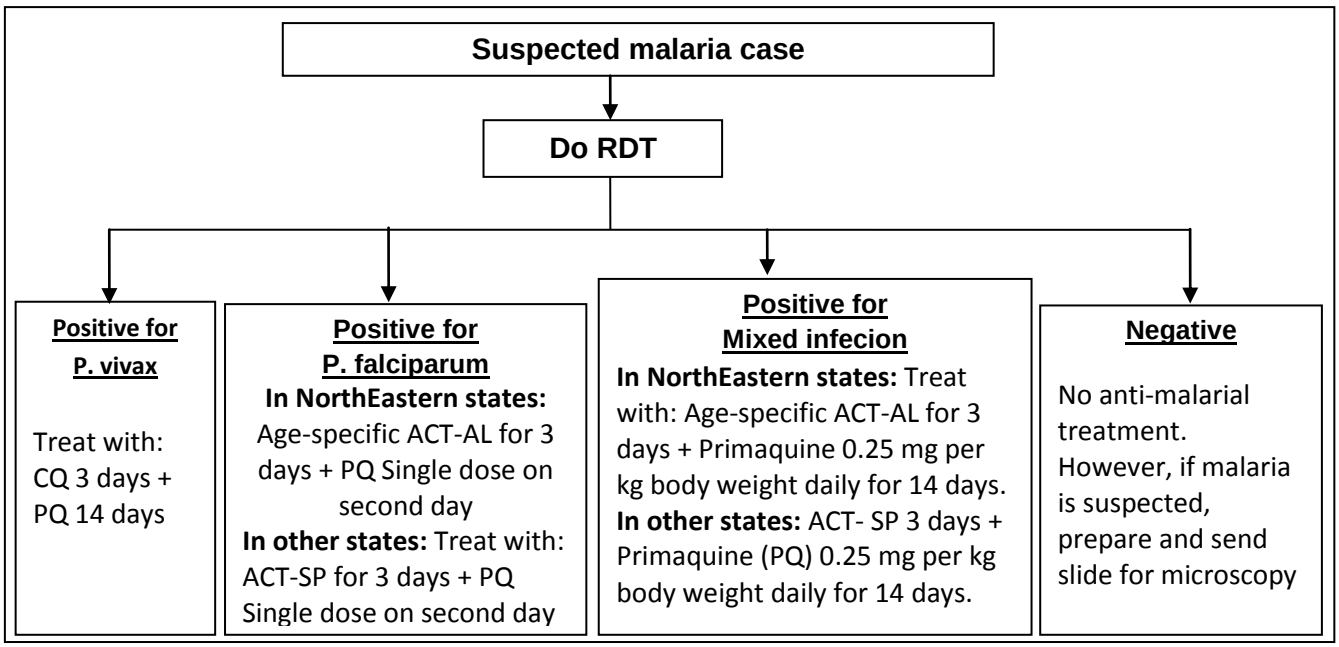
Instructions for use of Bivalent RDT

A patient with fever and no other obvious cause of fever is considered a case of *suspected malaria*. Any Community health volunteer observing a case of suspected malaria must immediately initiate a diagnostic test by

1. Microscopy of blood for malarial parasites and/or
2. Rapid Diagnostic Test

Under the programme Slide Microscopy for Malaria is the standard diagnostic tool & wherever a microscopy result **can** be made available within same day, microscopy will be maintained as the only routine method for diagnosis of malaria. Where this is not possible, bivalent RDT is used.

Where microscopy result is not available within same day and Bivalent RDT is used



Note: if a patient has severe symptoms at any stage, then immediately refer to a nearest PHC or other health facility with indoor patient management or a registered medical doctor

Note: PQ is contra-indicated in pregnancy and in children under 1 year (Infants)
ACT-AL - Artemisinin-based Combination Therapy- Artemether - Lumefantrine
CQ - Chloroquine
PQ - Primaquine

Blood smear preparation and performing RDTs:

Blood smear preparation.

For preparation of blood smears, clean glass slides, disposable lancet, spirit swab for cleaning the finger, cotton, a clean piece of cotton cloth and lead pencil are required. After the patient information has been recorded on the appropriate form, a clean glass slide free from grease and scratches is taken and the finger of the patient is cleaned by using a spirit swab.

	Select the second or third finger of the left hand.
	The site of the puncture is the side of the ball of the finger, not too close to the nail bed.
	Allow the blood come up automatically. Do not squeeze the finger.
	Hold the slide by its edges.
	The size of the blood drop is controlled better if the finger touches the slides from below.
	Touch the drop of blood with a clean slide; three drops are collected for preparing the thick smear.
	Touch another new drop of blood with the edge of a clean slide for preparing the thin smear.
	Spread the drop of blood with the corner of another slide to make a circle or a square about 1 cm.
	Bring the edge of the slide carrying the second drop of blood to the surface of the first slide, wait until the blood spreads along the whole edge.
	Holding it at an angle of about 45o push it forward with rapid but not too brisk movement.

Write with a pencil the slide number on the thin film, Wait until the thick film is dry. The thin film is always used as a label to identify the patient.

- The blood should not be excessively stirred. Spread gently in circular or rectangular form with 3 to 6 movements.
- The circular thick film should be about 1 cm in diameter.
- Allow the thick film to dry with the slide in the flat, level position protected from flies, dust and excessive heat.
- Label the dry thin film with a soft lead pencil by writing in the thicker portion of the film the blood slide number and date of collection.

The lancet and cotton swab should be disposed off as per the standard hospital waste management policy. The SOPs on laboratory work and universal precautions for blood collection are to be followed. Non-disposable needles should not be used and only disposable lancets should be used for finger pricking.

Treatment is initiated depending on results of RDT.

Chapter-2

Treatment of Malaria

Dosage Chart for Treatment of *Vivax* Malaria

Age	Day 1		Day 2		Day 3		Day 4 to 14
	CQ (250 mg)	PQ (2.5 mg)	CQ (250 mg)	PQ (2.5 mg)	CQ (250 mg)	PQ (2.5 mg)	PQ (2.5 mg)
Less than 1 yr	½	0	½	0	¼	0	0
1-4 years	1	1	1	1	½	1	1
5-8 years	2	2	2	2	1	2	2
9-14 years	3	4	3	4	1½	4	4
15 yrs or more*	4	6	4	6	2	6	6
Pregnancy	4	0	4	0	2	0	0

CQ 250 mg tablet having 150 mg base

Dosage Treatment Chart for P. falciparum Malaria:

In North-Eastern States (NE States): **ACT-AL** Co-formulated tablet of ARTEMETHER (20 mg) - LUMEFANTRINE (120 mg)

(Not recommended during the first trimester of pregnancy and for children weighing < 5 kg).

Recommended regimen by weight and age group:

The packing size for different age groups based on Kg bodyweight

Co-formulated tablet ACT-AL	5–14 kg (> 5 months to < 3 years)	15–24 kg (≥ 3 to 8 years)	25–34 kg (≥ 9 to14 years)	> 34 kg (> 14 years)
Total Dose of ACT-AL	20 mg/ 120 mg twice daily for 3 days	40 mg /240 mg twice daily for 3 days	60 mg /360 mg twice daily for 3 days	80 mg /480 mg twice daily for 3 days
	Pack size			
No. of tablets in the Packing	6	12	18	24
Give	1 Tablet twice daily for 3 days	2 Tablets twice daily for 3 days	3 Tablets Twice daily for 3 days	4 Tablets Twice daily for 3 days
Colour of the pack	Yellow	Green	Red	White

Primaquine*: 0.75 mg/kg body weight on day 2

Treatment of uncomplicated *P.falciparum* cases in pregnancy:

1st Trimester : **Quinine** salt 10mg/kg 3 times daily for 7 days.
Quinine may induce hypoglycemia; pregnant women should not start taking quinine on an empty stomach and should eat regularly, while on quinine treatment.

2nd and 3rd trimester: **Area-specific ACT** as per dosage schedule given above.

- An RDT is done in front of the patient and a slide is taken. The bivalent RDT detects *Pv, Pf* as well as mixed infection. If it is positive, the patient is treated for falciparum or vivax malaria based on the diagnosis and the slide is discarded.
- In the bivalent RDT if line for *Pf* is found present then it is a case of *Pf* and accordingly the full course of ACT for three days and Primaquine on day 2 (second day) is to be given.
- If the line for *Pv* is present, then it is a case of *P vivax* and a full course of Chloroquine for three days and Primaquine for 14 days is to be given.
- If both the lines for *Pf* and *Pv* are present, then it is a case of mixed infection and the treatment of mixed infection i. e. ACT for three days and primaquine for 14 days is to be given.
- If the RDT is negative, (i.e. only control line is present) then the slide is to be sent for microscopic examination for confirmation.
- If no other cause can be found and the clinical suspicion is high (e.g. intermittent fever with rigors and sweats), the test should be repeated after about 24 hours and special efforts should be made to obtain the microscopy result rapidly.
- Some slides may also need to be preserved for cross checking the results as per the Quality Assurance Guidelines.

However, the worker/ health personnel should refer to product guidelines for any product specific instruction before using it. These tests have a short shelf-life and that they may deteriorate at high temperatures.

Chapter-3
Guidelines for Proper Storage of Drugs and RDK

The RDK should be stored in a cool, dry place inside the house and should not be exposed to sunlight. It can be stored in a refrigerator, but not in the freezer. The RDT may not give correct results if it is exposed to sunlight or if it becomes wet. Therefore, it is very important to store it carefully.
Drugs should also be stored in a cool dry place away from sunlight**.**

The ASHA/CHV have an important role in malaria control. They can help in early diagnosis, complete treatment and timely referral of malaria cases, thus saving many lives. They can also spread awareness in the community regarding source reduction and preventive measures like use of bednets.