

# TREATMENT OF UNCOMPLICATED MALARIA AMONG WOMEN OF REPRODUCTIVE AGE

## MALARIA CONFIRMED BY DIAGNOSTIC TEST

### ASSESS FOR PREGNANCY

Ask if woman is or may be pregnant (if uncertain or confirmation not available treat as though pregnant)

Reproductive age woman presenting with fever, testing negative for malaria:

**Do NOT treat for malaria**

Assess for other causes of fever and treat accordingly

### IF NOT PREGNANT

Assess for any allergies to antimalarials, provide 1<sup>st</sup> line ACT recommended by national guidelines at dose appropriate for age (see page 2)

### IF PREGNANT

Ask about date of last menstrual period, presence of fetal movement, ANC visits to date

**If patient is a woman of reproductive age, assess for pregnancy**

If pregnant, refer to ANC; provide and counsel about iron/folic acid, LLIN, IPTp-SP if appropriate; counsel on nutrition and danger signs\*

Give **first-line treatment** per national guidelines, **according to trimester**, and paracetamol if fever  $\geq 38^{\circ}\text{C}$  axillary; assess and treat for labor; counsel on danger signs\*, follow-up visit, LLINs, iron/folic acid, nutrition

**NOTE:** Treatment is the same regardless of HIV status except for women on zidovudine or efavirenz who should not take artesunate and amodiaquine-containing ACT regimens (WHO, 2015: Guidelines for treatment of malaria, 3<sup>rd</sup> edition page 48)

### CONDITION IMPROVES:

Counsel on danger signs\*, return to ANC, IPTp-SP, LLINs, iron/folic acid, nutrition

### NO IMPROVEMENT OR CONDITION WORSENS:

- Rule out noncompliance, re-treat and counsel about need to take drug as instructed
- Rule out vomiting of drug; if drug not tolerated refer to higher level of care
- Refer for confirmation of diagnosis by microscopy and treatment
- If symptoms of severe malaria are present, give pre-referral treatment and refer

For detailed information go to:

[http://whqlibdoc.who.int/publications/2011/9789241502092\\_eng.pdf](http://whqlibdoc.who.int/publications/2011/9789241502092_eng.pdf), page 28

\*Impaired consciousness, prostration, multiple convulsions, jaundice, respiratory distress, shock

### ABBREVIATIONS

**ACT** artemisinin-based combination therapy

**ANC** antenatal care

**IPTp-SP** intermittent preventive treatment of malaria in pregnancy using sulfadoxine-pyrimethamine

**LLIN** long-lasting insecticide-treated net

**RDT** rapid diagnostic test

Refer to page 2 of job aid for drug treatment regimens.



# SIGNS AND SYMPTOMS OF MALARIA

<b>UNCOMPLICATED MALARIA</b>  One or more of the following clinical features in the presence of malaria parasitaemia or positive RDT:  Axillary temperature $\geq 37.5^{\circ}\text{C}$ , and/or history of recent fever, and/or presence of anemia	<b>SEVERE MALARIA:</b> One or more of the following clinical features or laboratory findings in the presence of malaria parasitemia or positive RDT:	
	<b>Clinical Features:</b> <ul style="list-style-type: none"> <li>• Impaired consciousness/coma</li> <li>• Prostration/generalized weakness</li> <li>• Multiple convulsions (&gt;2 within 24 hours)</li> <li>• Deep breathing/respiratory distress</li> <li>• Acute pulmonary edema</li> <li>• Circulatory collapse/shock (systolic BP &lt;80 mm Hg)</li> <li>• Acute kidney injury</li> <li>• Clinical jaundice + evidence of other vital organ dysfunction</li> <li>• Significant bleeding</li> </ul>	<b>Laboratory Findings:</b> <ul style="list-style-type: none"> <li>• Hypoglycaemia (blood glucose &lt;2.2 mmol/l or &lt;40 mg/dl)</li> <li>• Metabolic acidosis (plasma bicarbonate &lt;15 mmol/l); hyperlactatemia (lactate &gt;5 mmol/l)</li> <li>• Severe normocytic anemia (Hb &lt; 7 g/dl, packed cell volume &lt;20%)</li> <li>• Hemoglobinuria</li> <li>• Hyperparasitemia*</li> <li>• Renal impairment (serum creatinine &gt;265 <math>\mu\text{mol/l}</math>)</li> <li>• Pulmonary edema (radiologic)</li> <li>• Plasma or serum bilirubin &gt;50 <math>\mu\text{mol/L}</math> (3 mg/dL) with a parasite count &gt;100,000/<math>\mu\text{L}</math></li> </ul>

Please note: uterine cramping or contractions can occur in pregnant women with both severe and uncomplicated malaria, and should be managed per RH guidelines.

\*Hyperparasitemia is defined as parasite densities >100,000/microliter (or >2.5% of RBC parasitized) in low transmission areas or 250,000/ microliter (or >5% of RBC parasitized) in areas of high stable malaria transmission. (Management of severe malaria: a practical handbook, 3<sup>rd</sup> edition. WHO 2012)

## TREATMENT FOR UNCOMPLICATED MALARIA<sup>a</sup>

	1 <sup>ST</sup> TRIMESTER	2 <sup>ND</sup> AND 3 <sup>RD</sup> TRIMESTERS / NON-PREGNANT ADULTS
<b>FIRST-LINE DRUGS</b>	Oral quinine salt 10 mg/kg every 8 hours for 7 days, PLUS, if available, + clindamycin 10 mg/kg orally twice daily for 7 days  ACT is indicated only if this is the only treatment immediately available, or if treatment with 7-day quinine plus clindamycin fails	Artemether/lumefantrine (Coartem): 20 mg/ 120 mg, 4 tablets orally every 12 hours for 3 days (to be taken after a fat-containing meal or drink) OR  Artesunate/amodiaquine (AS/AQ): 100 mg/270 mg, 2 tablets orally daily for 3 days <sup>b</sup>  Or other ACT recommended by WHO, effective as 1 <sup>st</sup> line treatment of <i>P. falciparum</i> in the country
<b>SECOND-LINE DRUGS</b>	Artesunate + clindamycin for 7 days OR  ACTs recommended as first-line drugs for 2nd and 3rd trimesters if oral quinine is not available or treatment fails	Oral quinine, and, if available, clindamycin for 7 days  Oral artesunate 2mg/kg once daily + clindamycin 10 mg/kg twice daily for 7 days <sup>c</sup>

Abbreviation: ACT, artemisinin-based combination therapy.

a. Refer to country guidelines for first- and second-line drugs.

b. Avoid prescribing amodiaquine-containing ACT regimens, if possible, to HIV-infected patients on zidovudine or efavirenz. (WHO, 2015: Guidelines for treatment of malaria, 3<sup>rd</sup> edition p. 48.)

c. No blister co-packaged forms of artesunate and clindamycin are available. To ensure high adherence to treatment, artesunate and clindamycin should be administered under observation to pregnant women who have failed other ACTs.

## STABILIZATION<sup>a</sup> AND PREREFERRAL TREATMENT FOR SEVERE MALARIA<sup>b</sup>

	ALL TRIMESTERS / NON-PREGNANT ADULTS
<b>FIRST-LINE DRUG</b>	Parenteral artesunate 2.4 mg/kg IV bolus ('push') injection or IM injection as loading dose
<b>SECOND-LINE DRUG</b>	If artesunate is unavailable, intramuscular artemether should be given, and if this is unavailable then parenteral quinine should be started immediately until artesunate is obtained <sup>c</sup>

a. Treat shock: ensure airway; position on side with legs elevated; ensure warmth; start IV infusion; perform relevant laboratory tests; treat convulsions and fever (refer to WHO IMPAC manual Managing Complications in Pregnancy and Childbirth: a guide for midwives and doctors).

b. WHO recommends artesunate as first-line drug to treat severe malaria in all trimesters). A job aid on administering IV artesunate is available at <http://www.mmv.org/access/injectable-artesunate-tool-kit>.

c. WHO, 2015: Guidelines for treatment of malaria, 3<sup>rd</sup> edition p. 87.

