

P. Falciparum Malaria Treatment  
Thai-Burmese Border Guidelines- 3/2000

Criteria for Severe Falciparum Malaria

*Either*

history of recent possible exposure and no other recognized pathology

*OR*

Asexual forms of *P. falciparum* on blood smear

*AND*

Any one or more of the following 11

- 1) Impaired consciousness or coma
- 2) Severe normocytic anemia
- 3) Renal Failure
- 4) Pulmonary Edema (ARDS)
- 5) Hypoglycemia
- 6) Shock
- 7) DIC, spontaneous bleeding
- 8) Repeated generalized convulsions
- 9) Acidemia/acidosis
- 10) Hemoglobinuria
- 11) Parasitemia >5% in non-immune

- a) impaired consciousness but rousable
- b) prostration
- c) hyperparasitemia
- d) jaundice
- e) hyperpyrexia

Quinine Rx for Severe Malaria

A. Infusion Pump Method

1) **Quinidine (base) 6.2 mg/kg loading dose** [quinidine gluconate (salt) 10 mg/kg] IV **over 1-2 hours**, then **quinidine (base) 0.0125 mg/kg/min** [quinidine gluconate (salt) 0.02 mg/kg/min] for 72 hours or until pt can take PO treatment.

*OR*

2) **Quinine (base) 5.8 mg/kg loading dose** [quinine dihydrochloride (salt) 7 mg/kg] IV **over 30 minutes** followed immediately by **8.3 mg base/kg** [quinine dihydrochloride (salt) 10 mg/kg] diluted in 10 ml/kg isotonic fluid (D5 preferred) IV over 4 hours, repeated q8h until pt can take PO treatment.

B. Without Infusion Pump

3) **Quinidine (base) 15 mg/kg loading dose** [quinidine gluconate (salt) 24 mg/kg] in 250cc NS infused **over 4 hours** followed by maintenance dose, beginning 8 hours after the beginning of the loading dose, of **quinidine (base) 7.5 mg/kg** [quinidine gluconate (salt) 12 mg/kg] over 4 hours, **every 8 hours** until pt can tolerate PO treatment.

*OR*

4) **Quinine (base) 16.7 mg/kg loading dose** [quinidine dihydrochloride (salt) 20 mg/kg] IV **over 4 hours**, then **8.3 mg base/kg** [quinine dihydrochloride (salt) 10 mg/kg] diluted in 10 ml/kg isotonic fluid (D5 preferred) IV over 4 hours, **repeated q8h** until pt can tolerate PO treatment.

*OR*

5) Quinine dihydrochloride (**salt**) **20 mg/kg loading dose** divided in **2 simultaneous IM injections** in anterior thigh after 50% dilution into sterile water, then quinine dihydrochloride (salt) 10 mg/kg **IM q8h** (50% dilution into sterile water), until pt can tolerate PO treatment.

#### **NOTES**

- WATCH FOR HYPOGLYCEMIA!!!!
- Do not use loading dose if pt received quinine, quinidine, mefloquine w/in 24hours
- Switch to PO quinine (or other) ASAP.
- IV therapy >48h requires reduction of the maintenance dose by 1/3 to 1/2.
- Beware of sterile abscesses with IM treatment.
- Mefloquine is contraindicated.

#### **Artemether for Severe Malaria**

- 3.2 mg/kg IM x1, then
- 1.6 mg/kg/24 hours
- Switch to oral regimen ASAP, to finish artemether/artesunate, IM/PO over 7 days for total consecutive dose of 16 mg/kg.
- Always use AS7D7, Q7T7, or Q7D7 or AS7, Q7 in pregnancy (see below).

#### **Treatment of Uncomplicated PF Malaria**

##### **1) MAS3**

Day 1- artesunate 4 mg/kg

Day 2- artesunate 4 mg/kg + Mefloquine 15 mg/kg

Day 3- artesunate 4 mg/kg + Mefloquine 10 mg/kg  
if only 1st dose is supervised, give mefloquine D1 & D2

- No mefloquine in last 63 days
- Not pregnant
- No hyperparasitemia
- No signs of severe malaria

##### **2) AS7D7**

D1 through D7- artesunate 2 mg/kg + doxycycline 4 mg/kg/day

- If had mefloquine in last 63 days or,
- Failure with MAS3 (last 63 days)
- No doxy if pregnant or < 8 y/o

##### **3) MAS7**

D1- artesunate 4 mg/kg

D2- artesunate 2 mg/kg + mefloquine 15 mg/kg

D3- artesunate 2 mg/kg + mefloquine 10 mg/kg

- D4-D7- artesunate 2 mg/kg
- Uncomplicated Hyperparasitemia (> 4% RBC's infected)
  - No mefloquine in last 63 days
  - No signs of severe malaria

- Admit for close observation

4) **Failure** after AS7D7 (last AS7D7 <42 days)

- repeat AS7D7

5) **Failure** after MAS3 or MAS7 (last < 63 days)

D1- artesunate 4 mg/kg + doxycycline 4 mg/kg/d

D2-D7- artesunate 2 mg/kg + doxycycline 4 mg/kg/d

- Do not use doxycycline if pregnant or < 8 y/o

#### Treatment of PF Malaria in Pregnancy

1) Uncomplicated Malaria

*First Trimester (< 12cm FH)*

1st PF- **SQ7** supervised Quinine (salt) 10 mg/kg/dose tid x7d

2nd PF- **AS7** artesunate 2 mg/kg/d x7d (total 14 mg/kg)

3rd PF- AS7

4th PF- AS7 or QAC7 or AAP7 (see below)

*Second/Third Trimester (>12 cm FH)*

1st PF- **SQ7** supervised Quinine (salt) 10 mg/kg/dose tid x7d

2nd PF- **AS7** artesunate 2 mg/kg/d x7d (total 14 mg/kg)

3rd PF- AS7

4th PF- **QAC7** Quinine + Clindamycin (>98% cure) *or*

**AAP7** artesunate + atovaquone/proguanil

2) Uncomplicated Hyperparasitemia

*ALL Trimesters-*

**AS7-** 4 mg/kg day 1, then 2 mg/kg qd (total 16 mg/kg)

3) Severe Malaria

*ALL Trimesters*

Treat as for severe malaria with **artemether IM**

- Total dose artemether/artesunate IM/PO 16 mg/kg

#### NOTES

- Every treatment must be supervised

- Quinine alone is first treatment attempted

- Supervised quinine has 30-40% failure rate

- Artesunate is second line treatment as fetal effects are less well known

- Mefloquine should probably not be used in pregnancy (trend to malformations)

- 85% of second infections are same parasite, thus termed recrudescence rather than failure (just too common)