

Malaria Diagnosis and Initial Management

Overview

The intent of this document is to provide immediate guidance for the initial diagnosis and management of malaria at UNC Hospitals. Infectious Diseases consultation is recommended when malaria is diagnosed or strongly suspected.

Malaria Diagnosis

Epic Order: “Malaria Screen”

McLendon Lab: <https://www.uncmedicalcenter.org/mclendon-clinical-laboratories/available-tests/parasite-exam-malaria/>

Send blood (lavender top tube) immediately to lab. Initial screening test is BinaxNOW (*Plasmodium* antigen detection), with reflex to malaria smear. BinaxNOW is run on-demand with 2-hour turnaround time. Malaria smear is performed during day shift. Immediate Infectious Diseases consultation is recommended when malaria is suspected.

Additional tests needed: CBC/diff, CMP, blood gas (venous acceptable). While evaluating for malaria, consider testing for other causes of fever in tropical settings, such as typhoid, dengue, chikungunya, rickettsial infections, and non-travel-related causes of fever. If suspicion for malaria is high and initial test is negative, it is reasonable to repeat the test.

Returning travelers with fever should also be screened for travel to regions of possible outbreaks of viral hemorrhagic fever (VHF, such as Ebola or Marburg) or contact with individuals with VHF. If concern for VHF, place patient in isolation and contact SPARC Team Member On-Call (UNCMC – SPARC Team in Directory)

Assessment of Malaria Severity

In general, severe malaria is treated initially with IV artesunate followed by oral antimalarials, while nonsevere malaria is treated with oral antimalarials. Severe malaria is defined as the presence of *any of*:

- Parasite density \geq 5%
- Impaired consciousness, convulsions, or coma
- Severe anemia (Hgb $<$ 7 mg/dL)
- Acute kidney injury
- Pulmonary edema or Acute Respiratory Distress Syndrome
- Circulatory shock
- Disseminated intravascular coagulation
- Acidosis
- Jaundice (must be accompanied by at least one other sign)

Table 1: Antimalarial Agent Selection

Malaria Classification	Recommended therapy
Severe malaria of any species	Initiate artesunate x 3 doses (followed by PO course) (Add primaquine if <i>P. vivax</i> or <i>ovale</i>)
Uncomplicated <i>P. falciparum</i>	Initiate artemether-lumefantrine
<i>P. vivax</i> or <i>ovale</i>	Initiate artemether-lumefantrine. Primaquine is also indicated after checking G6PD to confirm that the patient is not deficient.
Others	Refer to CDC Resources below

Table 2: Antimalarial Dosing

Drug	Pediatric Dose	Adult Dose	Schedule
Artesunate	<20 kg: 3.0 mg/kg IV ≥20 kg: 2.4 mg/kg IV	2.4 mg/kg IV	3 doses at 0, 12, and 24 hours
Artemether-lumefantrine (Coartem™)	1 tab: 20 mg artemether, 120 mg lumefantrine 5-<15 kg: 1 tab PO per dose 15-<25 kg: 2 tab PO per dose 25-<35 kg: 3 tab PO per dose >35 kg: 4 tab PO per dose	4 tab PO per dose	Day 1: Initial dose and second dose 8 hours later Days 2 and 3: 1 dose BID
Primaquine	0.5 mg base/kg PO, max 30 mg base	30 mg base PO	Check G6PD before giving. Daily x 14 days For patients ≥ 70 kg: 30 mg base PO daily, with course extended to reach a total cumulative dose of 6 mg/kg (base)

Note: See resources below for guidance on parasitemia monitoring, transitioning from IV to PO therapy, and completion of therapy course. Infectious Diseases consultation is strongly recommended.

Resources

CDC Malaria Algorithm: <https://www.cdc.gov/malaria/hcp/clinical-guidance/diagnosis-treatment.html>

CDC Malaria Treatment Table:

https://www.cdc.gov/malaria/resources/pdf/Malaria_Treatment_Table_202306.pdf

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