

Approach to Fever in the Tropics

Global Missions Health Conference, November 2018, Doug Collins MD
University of Cincinnati Family Medicine, Division of Global & Underserved Health / cambocollins@gmail.com

Case Pearls:

- Get the full story of _____. (Where *exactly* did you go? What *exactly* did you do?)
- Avoid _____ in undifferentiated fever until proven non-hemorrhagic.
- Beware the _____ (Dengue, Chik, YF, JE, etc).
- Don't sweat it if you feel overwhelmed.
- Consider _____ causes early. (What would a _____ provider think this is?)
- Remember to run the _____ DDX. (See below)
- _____ your DDX, don't exchange it.
- Don't forget _____ management.
- Categorize the _____ of the fever (Acute <14 days; Chronic >14 days)
- Order _____ key tests (CBC, Malaria Smear/RDT, Blood Culture, +/- Others)
- In regions of risk, keep _____ high on your DDX.
- If malaria (Pf) is on your DDX, _____ until proven otherwise.
- In hyperendemic areas, malaria smear may be positive but NOT the cause of the fever.
- Treat empirically with _____ key antimicrobials (Antimalarial, 3G Ceph, Doxycycline).
- Narrow the DDX for fever in returning travelers using _____ period.
- Use tools to know real-time _____ (Geosentinel, HealthMap, ArboNet, etc)
- Perform a careful, _____ exam to look for evolving signs.
- Narrow the DDX by _____ the fever. (Know key syndromes.)

Taxonomic DDX:

Viral

Common: Influenza, HIV, HAV/HBV/HCV
Arboviruses: Dengue, Chik, JE, YF, etc
Other Zoonotic: Q Fever, VHFs (CCHF etc), etc
Other: Ebola, MERS CoV

Bacterial

Cosmopolitan Aerobic GP & GN, Anaerobes
Tropical/Sub-Trop GP/GN: Typhoid & Enteric GNs, Melioidosis
Mycobacteria: MTB, Non-TB mycobacteria (Leprosy)
Spirochetes: Treponema (Syphilis), Borrelia (RF), Leptospira
Other Vector-borne: Rickettsiae (ATBF, Tick & Scrub Typhus), Ehrlichia, Anaplasma
Other Zoonotic: Anthrax, Brucellosis (UF)

Fungal/Mycoses

Aspergillosis, Cryptococcus, Coccidiomycosis, Histoplasmosis, Blastomycosis, Penicilliosis, Pneumocystis, etc

Protozoal

Intestinal/Genital: Amoebae/ALA
Blood/Reticuloendothelial/Tissue: Malaria, Babesiosis, Leishmaniasis, Trypanosomiasis (Chagas & HAT)

Helminths

Nematodes ("Roundworms")
– Intestinal: Strongyloidiasis, Loeffler's Syndrome (Strongyloides, Ascaris, Necator)
– Filarial: LF (Tropical Pulmonary Eosinophilia)
– Tissue: N/A
Trematodes ("Flukes"): Schistosomiasis, Liver Flukes (Fascioliasis, Clonorchiasis), Lung Fluke (Paragonomiasis)
Cestodes ("Tapeworms"): Echinococcus

Narrowing your DDX with the White Cell Count Differential:

ACUTE Fever (<14d)

- **Neutrophil leukocytosis:** *Bacterial sepsis, Leptospirosis, Borrelia (TBRF, LBRF)*
- **Leukopenia or lymphocytosis:** *Viral, Rickettsiae (Scrub Typhus, ATBF), Typhoid, Malaria*

CHRONIC Fever (>14d)

- **Neutrophil leukocytosis:** *Sepsis, Abscess including Amoebic Liver Abscess (ALA), Erythema Nodosum Leprosum (ENL), Cholangitis, Borrelia (TBRF, LBRF)*
- **Leukopenia:** *Malaria, Disseminated/Miliary TB, Visceral Leishmaniasis, Brucellosis*
- **Eosinophilia:** *Invasive parasites (Strongyloides, Schistosomiasis, Filariasis/TPE)*
- **Normal/Variable WBC:** *Localized TB, other infections, noninfectious causes*

