CULTURAL CONSIDERATIONS

“KNOWING A PATIENT’S CULTURAL INFORMATION IS JUST AS IMPORTANT AS KNOWING THEIR SEXUAL HISTORY OR DRUG HISTORY.”

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Why is cultural history important?

- May dictate who receives information and how much.
- May lead some patients to resist treatment.
- May drive patient decisions that are contradictory to Western scientific methods.

For example, refugee families may...

- Prefer medical staff deliver bad news about the patient to them first, allowing the family to decide when and what to tell the patient.
- Resist transferring a patient to long-term care because of the perception of "abandonment" or disrespect to the elderly.
- Rely on traditional remedies and may request Western health providers to administer them.
- Appear fatalistic, expressing the illness as "God's will."
- Resist treatment or care from providers of the opposite gender.

What can you do?

العربية

- Learn a few simple phrases
  - Hello, how are you, what is your name
- Smile, be pleasant and friendly
- Get to know your patient and let them get to know you
- Be mindful and respectful of cultural prohibitions regarding gender
  - Eye contact
  - Physical touch
  - Modest dress

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INTESTINAL HELMINTHS

• Most common intestinal infections found in migrant populations
• Little information available about consequences of infection after departure from endemic area.
• May be seen in routine stool exams or may produce elevated eosinophilia count that may be only clue to infection.


MOST COMMON

• *Ascaris lumbricoides* (Round Worm)
• *Hookworm*
• *Trichuris trichiura* (Whip Worm)
In many populations *Giardia intestinalis* is also common.
Intestinal Helminths

- Ascariasis (Round Worm)
  - Adult females: 20 to 35 cm
  - Adult male: 15 to 30 cm

Symptoms

- People infected with Ascaris often show no symptoms
- If symptomatic may have:
  - Abdominal discomfort or tenderness
  - Intestinal blockage in heavy infections
  - Rales, wheezes and tachypnea during pulmonary migration
  - Urticaria and fever may develop late in migratory phase
DIAGNOSIS

• Stool exam – May be negative for ova for up to 40 days after infection
• CBC shows eosinophilia during tissue migration phase
• Serological tests not clinically useful of rascariasis
• CXR - may see opacity
• Abdominal Xray, Ultrasound, CT

TREATMENT

• Albendazole
• All refugees older than 2 years of age coming to the US from Sub-Saharan Africa or Southeast Asia receive a single dose of 600 mg.
• Usual Treatment is 400 mg.
• Pre-departure single dose albendazole drastically decreases the likelihood of finding parasites in newly arrived refugees.
• Pregnancy: Not recommended during first trimester
• May be given to women who are breast feeding
• Contraindicated for children <1 year

WHY IS THIS IMPORTANT?

• Drug therapy affects only adult worms. If the patient has recently relocated, he or she may still be carrying larvae that are not yet susceptible to the drug.
• Patients should be re-evaluated in 3 months and retreated.
• In endemic areas, re-infection rates may approach 80% within 6 months.
• Drugs usually well tolerated with good results
WHIPWORM
- Hand to Mouth
- Symptoms include stool that contains a mixture of mucus, water and blood. Diarrhea has an acrid smell
- In severe cases there is growth retardation and impaired cognitive development

HOOKWORM
- 576-740 Million people in the world infected
- Live in small intestine
- Eggs passed in feces of infected person
- Larvae mature into a form that can penetrate the skin of humans
- Walking barefoot on contaminated soil

SYMPTOMS
- Most have no symptoms, especially if infected for the first time.
- Most serious effects are blood loss leading to anemia and protein loss.
- Loss of iron and protein can retard growth and mental development of children.
Treatment

Drug | Dosage for adults and children
---|---
Albendazole | 400 mg orally once
100 mg orally twice a day for 3 days or 500 mg orally once
Mebendazole | 11 mg/kg (up to a maximum of 1 g) orally daily for 3 days
Pyrantel pamoate

TWO MOST IMPORTANT ORGANISMS

- Two most important organisms causing the majority of severe morbidity and mortality in migrant populations after leaving endemic areas are:
  - *S. stercoralis* – 100 million people worldwide
  - *Shistosoma* – 200 million

Strongyloidiasis (round worm)

- Infected when someone comes in contact with contaminated worms
- Bare feet
- Contact with human waste or sewage
- Coal mining,
• Barely visible to naked eye. Worms move through a person’s skin into blood stream to lungs and airways.
• As the worms grow older, they bury themselves in the intestines, produce eggs in intestines.
• Areas where worms go through the skin may be red and painful

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ACUTE SYMPTOMS

• Gastrointestinal
  • Stomachache, bloating, heartburn
  • Intermittent episodes of diarrhea and constipation
  • Nausea and loss of appetite

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• Respiratory
  • Dry Cough
  • Throat irritation

• Skin
  • Itchy, red rash that occurs where the worms entered the skin
  • Recurrent raised red rash typically along the thighs and buttocks
**DIAGNOSIS**

- Blood antigen test
- CBC with Diff
- Duodenal aspiration
- Sputum culture
- Stool sample

**TREATMENT**

- Ivermectin –
  - Cannot be given to children < 1 yr or ≤ 25 kg
  - Contraindicated in pregnancy
  - Full recovery expected with adequate treatment
  - Wide spread infections have a poor outcome, especially in people with weakened immune systems.

**CHRONIC STRONYLOIDIASIS**

- Generally asymptomatic - but if symptomatic, GI and cutaneous manifestations are most common.
- Worms may advance as rapidly as 10 cm/hr
- Rare complications – arthritis, cardiac arrhythmias, signs and symptoms consistent with chronic malabsorption, duodenal obstruction, nephrotic syndrome and recurrent asthma
- Mild eosinophilia or elevated IgE levels

**HYPERINFECTION SYNDROME AND DISSEMINATED STRONGYLOIDIASIS**

- Seen in patients with subclinical infection in patients receiving corticosteroids for asthma or COPD exacerbations and immunocomprimesed
- In Chronic disease, larvae limited to GI tract and lungs
- Numerous organs are invaded and left untreated mortality rates can approach 90%
**African eye Worm** - caused by parasitic worm *Loa loa*.
Transmitted through bites of deerflies (mango flies) – cannot treat with Ivermectin

**Cysticercosis** - caused by larval cysts of the pork tapeworm.
Cysts infect brain, muscle or other tissue: Major cause of adult onset seizures
Caused by ingesting eggs excreted by a person who has an intestinal tapeworm

**NOT caused by eating undercooked pork** but by the *TAPEWORM* acquired by eating undercooked pork containing larval cysts.
Do not give albendazole or praziquantel to anyone with a history of seizures
SCHISTOSOMIASIS
BILHARZIA

• Highly endemic to parts of Africa and Asia but can also be found in South America, the Caribbean and the Middle East.
• Estimated 700 million people are at risk and >200 million are affected annually.

Statistics

• WHO: Schistosomiasis is second only to malaria in public health importance.

**Schistosoma - What is it?**

- Commonly referred to as a blood or liver fluke
- 3 most common types:
  - *S. mansoni*, *S. haematobium*, *S. japonicum*
- Humans principal reservoir for these types
- Intermediate Host – 5 types of snails.

**How do you get it?**

- Found in fresh water lakes and rivers
- Infection occurs when skin comes in contact with contaminated water
- Parasites can penetrate the skin of persons who are wading, swimming or bathing in the water.

**Those at Greatest Risk**

- **Children**: 6-15 years old, who swim/play in bodies of fresh water (lakes, streams, and irrigation channels) They spend long hours in the water and their entire bodies are exposed
Those at Greatest Risk

- **Women:** They tend to be the ones collecting water, washing clothes and cooking utensils. Being in contact with water increases likelihood of becoming infected. This is particularly important when women are pregnant.

Those at Greatest Risk

- **Fishermen/irrigation workers.** People whose occupations involve contact with water are more exposed to infection and should be treated as a high-risk group.
SYMPTOMS

- Symptoms are caused NOT by the worms but by the body's reaction to the eggs.
- Eggs shed by adult worms can become lodged in intestine or bladder, causing inflammation and scarring.
- Urinary shistosomiasis
- Gastrointestinal
- Hepatic

Acute Infection

- Incubation period is 14 – 84 days (Katayama syndrome) Most are asymptomatic when first infected
- Penetration of cercariae can cause rash within hours or up to a week.
- Katayama syndrome characterized by fever, headache, myalgia, diarrhea and respiratory symptoms. Eosinophilia is present and often painful hepatomegaly or splenomegaly.

Chronic Symptoms

Intestinal

- Abdominal Pain
- Eggs deposited in colon
  - Diarrhea, constipation, blood & mucus in stool
  - Inflammation can lead to bowel ulceration
  - Granuloma
  - Liver fibrosis
Chronic Symptoms

- *S. haematobium*
- Eggs lodge in the urinary tract - causing dysuria and hematuria.
- Calcifications in the bladder may appear late in the disease.
- Infection has been associated with increased risk of bladder cancer.

Chronic Symptoms

- In rare cases, central nervous system schistosomiasis may develop
- Eggs may travel to any part of the body including the brain and spinal cord which can cause paralysis or myelitis
Chronic Symptoms
• Chronic inflammation contributes to:
  - ↓ Caloric intake → Undernutrition
  - Anemia
  - Stunting
  - ↓ Work capacity
  - ↓ Cognitive development.
• Has been known to persist in humans for more than 30 years

Schistosomiasis
Pregnancy
• Increased worm/egg burden
  - r/t increased pelvic blood flow
• Severe anemia
• Spontaneous abortion & low birth weight
• Increase risk of infant & maternal mortality

Schistosomiasis
Pregnancy
• Adult worms and eggs inhabit placenta
• Newborns have been diagnosed with disease.
• Antigen & Antibodies pass mother-infant
  - Placenta
  - Breast milk
Other Considerations

• Ault worms do not multiple in the body – so the level of infection and disease is proportional to exposure.

• “Re-infection” = New exposure

DIAGNOSIS

• Microscopic examination provides definitive diagnosis:
  • Urine, stool, or tissue sample for eggs
  • Serologic
    • Useful for light infections and in travelers who have not had schistosomiasis previously
  • Antibody tests do not distinguish between past and current infections.

Treatment

• Praziquantel is the drug of choice for all forms of Schistosomiasis.
• Dosage based on weight
• May be given to pregnant women
• Not for children <4
Treatment

In areas where scales are unavailable or unreliable, however, height can be used to calculate the correct dose.

Treatment Considerations

- Adverse reactions to praziquantel treatment are usually mild and last less than 24 hours.
- The reaction may be due to dying worms and not related to drug toxicity.
- Headache, dizziness, or abdominal pain in addition to nausea, vomiting, diarrhea, bloody stools, fever, and urticaria have been reported.

MALARIA: It’s Deadly q 15 s

- www.cdc.gov/malaria updated July 2010
WHY PRESUMPTIVE TREATMENT?

- Refugees can arrive with asymptomatic or sub-clinical malaria
- Certain refugees will develop clinical malaria approximately 3 months after arrival
- Lack of knowledge of malaria among health professionals in the US can lead to delay in diagnosis and inappropriate treatment.

PRESUMPTIVE TREATMENT

- Pre-departure - Artemisinin-based combination therapy (ACT)
  - Coartem – artemether-lumefantrine
  - Wide therapeutic window
  - Minimal side effects
- Post Arrival
  - Malarone – highly effective for most types
  - Few side effects

When a refugee does not receive presumptive therapy:

- monitor for signs and symptoms of disease for 3 months regardless of post-arrival testing results.
- Children < 5kg, pregnant women and those with allergies are excluded from all presumptive treatment
- Refugees from Sub-Saharan Africa need presumptive treatment
- Refugees from Southeast Asia, South Asia, Central Asia generally come from areas with low levels of transmission.
What is Malaria?

• Serious, sometimes fatal disease
• Caused by a parasite
• 5 kinds that infect humans
  - *Plasmodium Falciparum* – majority of deaths
  - *P. Vivax*
  - *P. Ovale*
  - *P. Malariae*
  - *P. Knowlesi* (monkey)

How do you get Malaria?

• From the bite of a malaria infected, female *Anopheles* Mosquito.
• Over 3200 species, but only this one carries a malaria parasite that can be transmitted to a human.
• Feeds on humans from *dusk to dawn*, and in *heavily shaded areas* during the day.

• Sometimes known as the *MALARIA MACHINE*; it can bite hundreds of times a day!
• Has a low-pitched, almost inaudible hum.
Malaria Cycle

Malaria parasite bursts out of the liver and invades blood cells

Malaria parasite flourishes inside liver of person – usually for 10-14 days

Malaria parasite travels to person’s liver

Mosquito injects malaria parasite into person during bite

Mosquito bites infected person

Mosquito bites another person

Malaria parasite flourishes inside mosquito

Malaria parasite becomes sick

Toxins are released and newly infected person becomes sick

Malaria parasite bursts out of the liver and invades blood cells

Malaria Signs and Symptoms

- Usually occur 7-21 days after infection (but can be 8 days - one year later)
- P. Vivax and P. Ovale can rest in the liver for several months - 4 years after infection.

Malaria Signs and Symptoms

- Fever
- Flu-like illness, abdominal pain
- Shaking, chills
- Headache, muscle aches, joint pain
- Fatigue
- Repeated vomiting, diarrhea
- Generalized convulsions and coma
- Kidney failure and death
How is Malaria diagnosed?

- The standard is a single malaria thick-and-thin smear
- The best yield for a positive smear is when you have fever

MALARIA SMEAR

- It is often necessary to do more than one smear.
- Remember – just because you have a negative blood smear doesn’t mean you do not have malaria.
- Three separate blood films taken at 12-24 hour intervals provide greater sensitivity

TREATMENT

- Guided by 3 main factors
  - 1. The infecting Plasmodium species
  - 2. The clinical status of the patient
  - 3. Knowledge of the geographical area to avoid likelihood of drug resistance of the infecting parasite
Treatment Options for Uncomplicated Malaria

- Malarone – Atovaquone and Proguanil HCL – Don’t use for TX if taking for prevention. Not for children < 5 kg, pregnant, or breastfeeding children < 5 kg.
- Coartem – Artemether – Lumefantrine

- Both equally safe and efficacious. >98%

Malaria Treatment

Primaquine

- If malaria is vivax or ovale, will need Primaquine

Dosage:
- Take 2 tablets daily for 14 days
- DO NOT take if you have an abnormal G6PD (a genetic condition diagnosed by a blood test)
- DO Not take if you are pregnant

Giardiasis: What is it?

- Traveler’s diarrhea
- Parasitic disease caused by Giardia lamblia
- Lives in the intestines and is passed in feces
- Spread through contaminated food, water or unwashed hands
- 1-3 weeks incubation
Giardia: Frequency

- Affects 2% of adults and 6% to 8% of children in developed countries worldwide.
- Nearly 33% of those living in developing countries have had giardiasis.
- In the U.S., giardiasis is the most common intestinal parasitic disease affecting humans.

Giardiasis: Symptoms

- Diarrhea
- Gas or flatulence
- Greasy stool that can float
- Stomach or abdominal cramps
- Upset stomach or nausea
- Dehydration

Giardiasis: Diagnosis

- Multiple stool collections – three stool specimens collected on separate days
- Sensitive and specific fecal immunoassays
Giardiasis: Treatment

<table>
<thead>
<tr>
<th>Drug</th>
<th>Adult Dose</th>
<th>Pediatric Dose</th>
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<tbody>
<tr>
<td>Metronidazole</td>
<td>250 mg, t.i.d. x 5-7 days</td>
<td>5 mg t.i.d. x 5-7 days</td>
</tr>
<tr>
<td>Tinidazole</td>
<td>2 g, single dose</td>
<td>50 mg, single dose (max, 2 g)</td>
</tr>
</tbody>
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Typhoid: What is it?

- Caused by the bacteria *Salmonella Typhi*
- Lives only in human bloodstreams and intestinal tracts
- Shed through feces
- Spread through contaminated food or water
- 10-20 days incubation

Typhoid

- 400 cases in the U.S. each year
- 75% of U.S. cases acquired while traveling
- 10 million cases per year in the developing world
- Untreated can last for a month
- Serious complications occur after 2-3 weeks of illness; intestinal hemorrhage or perforation can be life-threatening
Typhoid: Reach

Symptoms

- Incubation period of 6-30 days.
- Gradually increasing fatigue and fever that increases daily from low grade to 103°-104°F
- Headache, malaise, anorexia
- Rash, in some cases
- *Salmonella Typhi* present in stool samples

Typhoid: Diagnosis

- Infection results in a very low-grade septicemia
- Single blood culture positive 50% of the time
- Stool Culture not positive during acute phase of disease
- Widal test - serology assay - not reliable
- No definitive serologic test; diagnosis often has to be made clinically
Typhoid: Antibiotic Treatment
- Ciprofloxacin, 15 mg/day, 5-7 days
- Drug of choice but resistance is becoming more common

Typhoid: Patient Education
- Finish your antibiotics
- Wash your hands carefully with soap and water after using the bathroom
- Do not prepare or serve food for other people
- Two most important organisms causing the majority of severe morbidity and mortality in migrant populations after leaving endemic areas are: S. stercoralis and Schistosoma.
Sources

Sources- Cultural Considerations
Sources - Giardia

- The City of St. Helens, http://www.ci.st-helens.or.us/blog/water-filtration-facility/2012/Apr/26/what-giardia-it-dangerous-can-it-make-me-sick/

Sources

- http://www.ncbi.nlm.nih.gov/pmc/articles/PMC88965/table/T2/

  DOI: 10.3201/eid0905.020511
Sources - Malaria

- www.fitfortravel.nhs.uk/destinations.aspx
- www.cdc.gov/malaria

CDC Malaria Hotline:
- 1-770-488-7788 - work hours
- 1-770-488-7100 - after hours; Ask to speak with a CDC Malaria Branch Clinician.

Presumptive Treatment and Medical Screening for Parasites in Newly Arriving Refugees