EMPORIATRICS

- Definition: the study of diseases in travelers. From the Greek word Emporos (one who goes shipboard as a passenger) + iatrics (medicine)

- Travel Medicine is an interdisciplinary specialty concerned with the prevention and management of health problems associated with travel.
QUIZ

• What is the most frequent vaccine-preventable disease among travelers going to countries of lower hygiene standards?
  A. Hepatitis A
  B. Influenza
  C. Malaria
  D. Diarrhea
QUIZ

• What is the most common clinical illness in travelers to tropical and semi-tropical regions?
  A. Diarrhea
  B. Hepatitis A
  C. Typhoid
  D. Dengue fever
QUIZ

What is the most common cause of morbidity and mortality in travelers 50 years and older?
A. Malaria
B. Rabies
C. Cardiovascular disease
D. Accidents
QUIZ

• What is the most common cause of morbidity and mortality in travelers under 50 years of age?

A. Malaria
B. Rabies
C. Cardiovascular disease
D. Accidents
CAUSES OF DEATH WHILE TRAVELING

- Cardiovascular (heart attack, stroke) • 49%
- Accidents (auto, motorcycle) • 22%
- Medical illnesses • 13.7%
- Infectious diseases • 1.0%
Mainstays Of Pre-travel Medicine

• **Information**, with the goal of behavior modification: food/beverage, mosquitoes, safety issues and unprotected sex

• **Immunizations**: required and recommended vaccines

• **Chemoprophylaxis**: mainly suppressive therapy against malaria

• **Self-treatment**, especially for travelers’ diarrhea

• **Special precautions/travelers with special needs**: (e.g., chronic diseases, pregnancy, +HIV)
REQUIRED VACCINATIONS

• Yellow Fever (Live)
• Meningococcal
Vaccinations For Specific Diseases

- Typhoid (Inactivated and Live)
- Hepatitis A
- Hepatitis B
- Meningococcal
- Japanese Encephalitis
- Rabies
- (Plague)
ROUTINE VACCINATIONS

– Diphtheria/Tetanus/Pertussis (Td/Tdap)
– Pneumovax
– Influenza
– MMR (Live)
– Hemophilus Influenza b (Hib)
– Varicella (Live)
– Meningococcal
– Hepatitis A and B
– Polio
Yellow Fever

- Required if going to at risk areas and for administrative purposes (crossing at risk borders)
- Administered at official yellow fever centers
- Need to have a officially validated WHO yellow book
- Effective 10 days after administration
- Duration of immunity: 10 years
- No longer needs to be stored in freezer but needs to be administered within 30 minutes after carefully drawing it up
Yellow Fever, cont.

- Live, attenuated vaccine
- .5 ml SQ in arm
- Side effects: sore arm, flu-like sx
- Wait 30 minutes after vaccination before leaving clinic
- Contraindications: pregnancy, +HIV, anaphylactic allergy to eggs, < 9 months of age, history of thymus problems
- Use caution with elderly and immunosuppressed
- Use personal protection measures
- Carried by a daytime mosquito
Meningococcal Meningitis Vaccine

• Highly efficacious and well tolerated. The new conjugated vaccine has longer immunity
• Effective 10 days after vaccination
• Menomune (MPSV4): polysaccharide: age 2 and older
  • .5 ml **SC** in arm. Booster dose at 3-5 years
  • Good for 35 days once reconstituted
• Menactra (MCV4): conjugated: preferred vaccine ages 11-55
  • .5 ml **IM** in deltoid. Booster not yet determined
Meningococcal Vaccine, cont.

- Required for:
  - Saudi Arabia during the Hajj in March

- Recommended for:
  - international travel to endemic areas (Sub-Saharan Africa)
  - anyone with a damaged spleen or asplenia
  - anyone who has terminal complement component deficiency
  - college students (especially freshmen who live in dorms)
Hepatitis A

• Transmission
  – Contaminated food and water; Person to person

• Risk
  – From 1 in 1,000 per week of stay in a tourist area to 5 in 1,000 per week of stay off usual tourist routes
Hepatitis A vaccine

- Havrix and Vaqta--both equally effective and are interchangeable
- 1 ml IM preferably given at least 2 weeks before at risk
- Adult formulation: Havrix and Vaqta age 19 and older
- Shake well before administering
- Booster 6 to 12 months later
- Side effects: sore arm
Hepatitis B Vaccine for Travelers, Recommend If:

- Long-term traveler (>6 months, ?> 3 months)
- Frequent short-term traveler
- High-risk behaviour profile (sex, drugs)
- Occupational exposure: healthcare worker, military, aid worker, missionary
- Close contact with locals (e.g., VFR children)
- Adventure traveler
- Accident prone
Hepatitis B cont.

• Schedule
  – First 2 doses 1 month apart, 3rd dose 5 months after 2nd
  – Accelerated: 0, 7, 21 days or 0, 14, 28 days with booster at 1 year; or 0, 1, 2 months with booster at 1 year
• Adult dosage (1 ml) begins age 20
• Dialysis and immunosuppressed patients require more vaccine
• Education on preventing risks essential
Twinrix: Hepatitis A&B

- Recommended for at risk who are age 18 or older
- 0, 1, 6 months
- Accelerated schedule 0, 7, 21 days with a booster at 1 year, or other schedules similar to hepatitis B accelerated schedules
- Became available in 2001
Typhoid

- Transmission
  - Contaminated food and water

- Risk
  - Highest risk for those going off the usual tourist routes and those returning to visit family and friends
  - Rates higher in travelers to Indian subcontinent, Peru, Northwest Africa (excluding Tunisia), Mexico
Typhoid Vaccine: Live Oral

- 1 pill every other day for 4 doses
- Duration of protection 5 years
- Refrigerate
- Side effects: gi, flu-like sx
- Avoid if pt HIV+, immunosuppressed, gi disease or children <6 years of age
- Complete at least 1 week before trip
- Antibiotic use before, during and after will interfere with effectiveness
Typhoid Vaccine, cont.

• Killed injectable
  – .5ml IM
  – Duration of protection 2 years
  – Side effects: local reaction, flu-like sx
  – Takes 2 weeks to obtain immunity

• Both vaccines approximately 50-80% effective
Polio Vaccine

- Oral (live, Sabin, OPV) vaccine no longer used since January 2000
- Use injectable (inactivated, Salk, IPV)
- Booster (.5ml) recommended for adults for international travel (no polio in the Americas)
- Assess if primary series was done. IPV primary series: .5ml SQ or IM at 0, 6-8 weeks later, 6-12 months after the second
Rabies: Human Diploid Cell Vaccine (HDCV)

- High risk groups should receive pre-exposure series (veterinarians, animal handlers, trappers, those visiting and living in endemic countries for >30 days, certain lab workers)
- Controversy re need for titers. Traditionally high risk groups get titer drawn every 6-24 months depending on risk. Boosters given if titer <1:5
- Side effects: local reaction, fever
Rabies: Pre-exposure

- IM
  - 1 ml IM day 0, 7, 21 to 28

- Still need to avoid contact with animals and get post-exposure treatment after cleaning the wound (2 injections day 0, 3)
Rabies: Post-exposure

• If the patient didn’t receive pre-exposure treatment:
  – Rabies immune globulin (HRIG) 20 IU/kg with as much at the injury site as is possible
  – 1 ml IM day 0, 3, 7, 14, 28
Japanese Encephalitis

- Mosquito borne viral encephalitis
- If in endemic rural areas for > 30 days
  - Mostly Asia and India
- Still need to use good personal protection measures
- 1 ml SQ day 0, 7, 30
- Accelerated schedule: 0, 7, 14 or 0, 7, 28
Japanese Encephalitis, cont.

- Observe for 30 minutes after
- Side effects: can range from local reaction, flu-like sx to generalized urticaria, respiratory distress and anaphylaxis
- Need to stay by good health care for 10 days after administration
- Contraindications: pregnancy, anaphylactic allergy to gelatin
- Caution if history of multiple allergies
References


• __________ Epidemiology and Prevention of Vaccine-Preventable Diseases. 9th Edition: Centers for Disease Control and Prevention. Public Health Foundation, Maryland, 2006.


• __________ Guidelines for Vaccinating Pregnant Women. CDC Sep 2006.

• __________ Health Information for International Travel. Center for Disease Control; Georgia. 2007-2008.
“A vaccine not given is 100% ineffective!”