NewsShare
Newsletter of the International Society of Travel Medicine 2002 January/February

Society News

GeoSentinel

GeoSentinel is a 6-year old world wide communications and data collection network of ISTM member clinics that was developed by the ISTM and the US Centers for Disease Control. Twenty-five globally dispersed clinics, called GeoSentinel Surveillance Sites, have been participating in ongoing systematic data collection from all travelers seen at those sites. GeoSentinel has gained wide recognition within the international public health community for its global reach and rapid-response capabilities

As a next step, GeoSentinel participation is being broadened. Members with excellent patient populations who are unable to participate in systematic surveillance but who are willing to more informally provide leads and contacts when they encounter patients having unusual clinical events can now become GeoSentinel Network Members:

For information on the benefits of participation as a GeoSentinel Network Member, please go to:

<http://www.istm.org/geosentinel/main.html>

We view this as an exciting opportunity for large numbers of ISTM members to link together to help each other. Rapid and global public health responses in the face of possible or established international outbreaks will be facilitated. Time required by individual GeoSentinel Network Members should be minimal but collective output and benefit potentially great.

Sincerely yours,

David O. Freedman, Phyllis Kozarsky, and Martin Cetron
GeoSentinel Project Directors

Certificate of Knowledge in Travel Medicine Examination Update – Dec. 2001

The field of travel medicine encompasses a wide variety of disciplines including epidemiology, infectious disease, public health, tropical medicine, and occupational health. As a unique and growing specialty, it has become necessary to establish standards of practice in the field itself. These standards have been established to identify the scope of competencies expected of travel medicine practitioners, guide their professional training and development, and ensure an acceptable level of patient care.

This Body of Knowledge will serve as the basis for an examination being developed for all travel health professionals. The Body of Knowledge has been published on the ISTM website (www.istm.org). You will find it by selecting "Educat. Postings" on the left hand menu on the home page. It will also be available in a future edition of the Journal of Travel Medicine.

The examination will be administered prior to the opening of the 8th CISTM in New York on Wednesday, May 3, 2003. Practitioners who successfully complete this examination will be awarded a Certificate of Knowledge in Travel Medicine by the ISTM. Information about the Certificate of Knowledge examination will also be posted on the ISTM website.

Eligibility: The examination is open to all licensed travel medicine practitioners including nurses, physicians, and physician's assistants. Both ISTM members and non-members are eligible to participate.

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Air Travel for Newborns and Infants

Karl Neumann, MD, FAAP

Healthy newborn infants are physiologically fit to fly. Most major world airlines have removed all restrictions that formerly banned such travel in the first few weeks of life. The restrictions stemmed from the early days of aviation and were based on the facts that the aircraft of that day were not pressurized, that oxygen was sometimes required during flights, and that little was known about newborn physiology and how infants would fare in flight. The old regulations are still often cited in the travel medicine and pediatric literature and in the lay press.

A telephone survey of the 7 largest U.S. airlines and the 4 largest foreign airlines that serve the U.S. shows that none of them have a lower age restrictions for infants to travel by air. Four of the U.S. airlines suggest that parents of infants less than a week old "check with their doctor," or "have a note from a doctor" that says the infant is in good health. However, such a note is rarely, if ever, asked for by check-in and boarding gate atten-

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"There are no data to determine whether or not newborns and infants are at increased risk of infectious diseases during air travel."

dants. Other information in airline computers include: only one infant per row because of oxygen mask considerations; parents should consider using an infants' safety seat; and exposure to infection aboard the aircraft could be a problem for infants of this age. One airline requires that all infants be accompanied by an adult!

Modern commercial jet airliners generally cruise at altitudes between 9,000 and 12,000 meters (30,000 and 40,000 feet). The aircraft are not totally pressurized, resulting in a simulated cabin atmospheric pressure between 1,500 and 2,400 meters (5,000 and 8,000 feet). At this atmospheric pressure the arterial blood oxygen saturation of healthy passengers of all ages decreases from near 100% at sea level to about 90 to 92%, a saturation level that is well tolerated by healthy newborns and infants. The oxygen dissociation curve is very helpful in maintaining oxygen saturation at a high level at all ages. Healthy newborns have well developed lungs and usually have high hemoglobin levels, which may be an additional safety factor.

Air travel may NOT be safe for infants with severe anemia, congenital heart disease (especially abnormalities of the right side of the heart), and poorly or abnormally developed lungs. It is important to note that some of these conditions may not be present or recognized at birth, and may become symptomatic during flight or while the family is visiting high altitude destinations. There are no known reports of an infant having cardiopulmonary problems as a result of an airplane flight, though such problems have been reported for infants born at or near sea level who subsequently were taken to elevations over 1800 meters (6,000 feet). Children (and adults) with sickle cell disease, for example, often do poorly at the atmospheric pressure existing at cruising altitudes, but infants with this condition are generally not symptomatic in the first few months of life. In spite of one recent article in a major medical journal stating that a history of recent air travel is a risk factor for SIDS, the consensus of experts is that there is no such association.

There are no data to determine whether or not newborns and infants are at increased risk of infectious diseases during air travel. Many adult frequent flyers claim that they experience more URI's after flights than at other times. Speculation implicates prolonged and close togetherness in an enclosed space, recirculating cabin air, exposure to travelers from distant parts of the world where different strains of organisms circulate, changes in the immune system due to the stresses of travel, and the extreme dryness in the cabin air. Dry air results in a lack of moisture in the nasal passages. This may facilitate organisms passing through. Saline nose drops may alleviate this.

There are several documented cases of adults acquiring tuberculosis during long flights, and acquiring influenza in an aircraft standing on the tarmac for many hours with no operational ventilation system. In the tuberculosis incident, the passengers who acquired the disease were all sitting near an infected, heavily-coughing passenger. The U.S. Centers for Disease Control believes that such incidents occur extremely rarely.

Currently there is much debate about air quality in the aircraft cabin. In recent years, to save fuel, airlines have changed the method of supplying air to aircraft in flight. Under the old system, air was exchanged every few minutes. Under the new system, half the air in the cabin is passed through sophisticated systems and re-circulated. The result is that the air that passengers breathe is about half re-circulated air.

Fresh air is taken in from the outside and is virtually sterile; there are no microorganisms in the air at cruising altitudes. Moreover, the outside air passes through the very hot engines killing any organisms, and is then cooled. This is a very expensive process. Re-circulated air passes through sophisticated filters, making it virtually as microorganism-free as fresh air. But some experts question whether or not the filters in use eliminate all viruses. The consensus appears to be that the risk of acquiring infection in-flight is small but that it does exist.

Parents have few options for protecting their infants from risks of exposure to microorganisms in flight and that these options are largely unproven and impractical: flying at off-hours when there tend to be fewer passengers; traveling first class where there is less crowding and, therefore, more air per passenger; flying early in the day when aircraft are cleaner; changing seats when a nearby passenger coughs and sneezes; frequent hand washing; and bringing ones' own pillow nad blankets. Aircraft are cleaned thoroughly only before the first flight of the day. Presumably, the air in the morning is cleaner. On most airlines, pillows and blankets are replaced only at the time of that cleaning. Lately, many major airlines exchange pillows and blankets only when they are visibly soiled – sometimes once every several weeks.

(Karl is the Editor of NewsShare and writes extensively about travel and wilderness medicine for professional and lay audiences. He is a practicing pediatrician and associate clinical professor/attending pediatrician at the New York Weill Cornell Medical Center in New York City.)

Schistosomiasis

Lawrence Proano, MD, DTM&H
Robert Partridge, MD, DTM&H

Schistosomiasis, a parasitic disease, has plagued humans since ancient Egyptians times. The disease was known as far back as 3200 B.C. Schistosome eggs and antigens have been found in Egyptian mummies, and papyrus documents have been discovered that describe the disease and discuss remedies for it.[1,2]

Schistosomiasis is still common, and is emerging where it has not been previously identified, the result of man-made or environmental changes, or major population migrations. In the Senegal River Basin in Africa, for example, population migrations combined with dams and crop irrigation projects has increased the incidence from virtually non existent 3 years ago to a prevalence of greater than 95%.[3]

There are three main types of human schistosomes: S. Mansoni, S. Hematobium, S. and japonicum. Humans become infected usually by immersing themselves partially or entirely in fresh water that contains infected cercariae. In endemic areas, any standing or moving untreated fresh water, whether natural or man-made (in irrigation projects or inadequately heated bath water, for example), may contain infective cercariae. Travelers who swim, wade, kayak, raft or hike in wetlands in endemic areas are also at risk for infection.

Epidemiology. Schistosomiasis is endemic in 74 countries in Africa, Asia, the Caribbean, and South America, with an estimated 200,000,000 cases and 800,000 deaths annually. Travel to these areas is increasing. Therefore health-care providers need to be aware of the disease. In addition, brief and even single exposures to fresh water have been associated with infection (seropositivity). In two studies, in Mali, and in Malawi, of previously unexposed, generally asymptomatic expatriates 28 of 29 (97%) and 142 of 427 (33%) were seropositive.[4,5] Two separate cases of severe central nervous system schistosomiasis occurred among Peace Corps volunteers with recreational water exposure in Lake Malawi.[6]

Life Cycle. Humans are the definitive host of the human schistosomes, and an accidental host of other schistosome species (those infecting birds and other mammals). Non-human schistosomes usually cause only an irritating, self limited dermatitis.

The life cycle of human schistosomes is well described. Snails are the intermediate host. The cycle begins with the shedding of eggs from man in stool and urine. The eggs hatch in fresh water and release the larval form (miracidiae). These migrate to the intermediate host (snails). In weeks to months they mature into cercariae, and are then released from the snail into the water. The cercariae are the infective agents for humans, the definitive host.

The cercariae penetrate exposed skin, and reach the vascular system. Now called schistosomules, schistosomula go to the lungs and then liver. They circulate in the hepatic sinusoids and develop into adult worms. Worms pair in the liver, and migrate to various organ systems, where eggs are deposited. S. Mansoni migrates predominantly to mesenteric venules of the colon, S. Hematobium predominantly migrates to the venules of the bladder and genitourinary system. Mature eggs penetrate the lumen of the colon or bladder, and are excreted, completing the life cycle.

Pathology. The pathologic lesions of schistosomiasis are caused by several distinct mechanisms. With S. Mansoni and S. Japonicum infections, the eggs contain organic substances that induce granuloma formation and macrophage and eosinophil accumulation in tissues. They also induce lymphocyte activity stimulating fibroblast proliferation and portal fibrosis. The fibrosis ultimately leads to severe portal hypertension, esophageal varices, and ascites. These are the signs of long term schistosomiasis. Since the fibrous portal triads resemble the stem of a clay pipe, the lesions are termed "pipe-stem fibrosis". With S. Hematobium infections, egg deposition leads to granuloma formation within the wall of the bladder. Ultimately, fibrosis of the bladder and ureters leads to obstruction, hydronephrosis and recurrent urinary infections. There is a well described association between chronic S. Hematobium infections and squamous cell carcinoma of the bladder.

Clinical Presentation. The classic disease presentation is characterized by three clinical stages. Initially, cercarial penetration results in a transient pruritic rash ("swimmer's itch"). This first stage can occur up to 3 days after contact. The onset of the second stage of illness ranges from 3 to 8 weeks, and is often asymptomatic. During this stage, the schistosomules migrate to the lungs and during their passage through the lungs can induce a transient dry, nonproductive cough and nocturnal fevers. Less commonly seen signs include arthralgias, headache, diplopia, anorexia, nausea, weight loss, and scrotal itching.

Acute schistosomiasis occurs with the onset of egg deposition. In its more severe form, Katayama Fever, there is a serum sickness like syndrome, characterized by fever, chills, diaphoresis arthralgias, periorbital headache, dry non-productive cough, diarrhea, anorexia, and weight loss. Delerium and urticaria occur less commonly. Egg depostion occurs in either the bladder (S. Hematobium) or colon and rectal mucosa (S. mansoni or japonicum). Symptoms and signs usually disappear within a few weeks, but death may occur, particularly with S. japonicum. On physical examination, one generally finds enlargement of the liver, spleen, and lymph nodes.

Katayama Fever is more often noted in people who live outside the main endemic region of the disease and is the form commonly seen in travelers. Also, the more acute form is more often seen with S. japonicum, due to its greater production of worm and egg production, about ten times that of S. mansoni. It is unclear whether the acute form represents an im-

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mune complex disease, or a simple hypersensitivity and secondary inflammatory response.

The third stage is characterized by the late complications of the disease, generally years after an unrecognized infection. At this stage, the eggs induce chronic fibrotic scarring and granuloma formation. With S. mansoni, S. japonicum, the GI system is involved in the third stage, and there is secondary embolization of eggs to the liver. As a consequence, hepatic fibrosis ultimately results with accompanying portal hypertension. Liver cell perfusion is maintained however, so liver function tests remain normal until end stage disease results. Jaundice, hematemesis from varices, and ascites often result.

With S. Hematobium, the urinary tract is involved in the third stage of schistosomiasis. The granulomatous response here leads to urinary tract mucosal scarring and fibrosis. Secondary hydronephrosis and calcification of the GU tract results. An increased incidence of squamous cell carcinoma of the bladder has been noted with people with chronic S. Hematobium infections.

The differential diagnosis of patients who present during the second stage with the toxemic symptoms of Katayama fever includes malaria, brucellosis, mononucleosis, miliary tuberculosis, invasive strongyloidiasis or ankylostomiasis, trichinosis, visceral larval migrans and Churg-Strauss syndrome.[7]

Diagnosis. The first step in making the diagnosis of schistosomiasis is eliciting a travel history with fresh water exposure in endemic areas. Direct evidence of infection involves finding characteristic schistosome eggs in the urine or stool, usually in the third stage, and generally 5-12 weeks after exposure. If microscopic urinary and stool specimens are negative, then sigmoidoscopy, proctoscopy and cystoscopy may be helpful in identifying inflammatory changes or lesions in the colon or bladder mucosa. Rectal biopsy or snips may also be used. Schistosome eggs are more likely to be passed in the urine between the hours of 10 am and 2 pm. Eggs in the stool can be found at any time, although several stool specimens may need to be collected. A concentration technique should be used rather than a direct smear to increase sensitivity.

Peripheral blood analysis may yield some clues. Eosinophilia should be prominent in most cases, even in early stages of the disease. Indirect serologic testing using the ELISA technique is both sensitive and specific for human schistosomiasis, but is not available in all laboratories. ELISA serology may be positive in the second (acute) stage of disease 3-8 weeks after exposure. Other immunoassays have poor sensitivity and specificity and are known to give false positive results after exposure to avian schistosomes.

One problem with a positive serology is that it does not distinguish acute infection from prior exposure. Serology may remain positive long after treatment. However, in practice few clinicians go the extreme of invasive rectal biopsy to make the diagnosis. Many would choose to treat empirically a traveler with a history of potential exposure, symptoms from which to suspect the disease, and a positive serology, even with negative stools.

In later, chronic stages of this disease, liver biopsy and ultrasonography to assess for calcification of the liver, kidneys, ureters and bladder may be considered. Clinicians should always bear in mind that chronic salmonella infection may be associated with schistosome infection. *S. Hematobium* infection is associated with chronic urinary *Salmonella Typhi* infection, and *S. Mansoni* is associated with chronic *Salmonella* species septicemia. The Salmonella infection can only be cured after the patient has been treated for schistosomiasis. Human schistosome infection may also be associated with hepatitis B and C infection, and may increase the risk of transmission of HIV in females.

Treatment and Prevention. Praziquantel is effective against all human schistosomes and is considered the drug of choice. The dose is 40mg/kg orally as a single dose for *S. Hematobium*, and 30mg/kg orally for 2-3 doses for *S. Mansoni* and *S. Japonicum*. Mild gastrointestinal disturbance, headache and dizziness are common side affects, but are usually transient. Praziquantel should be avoided in the first trimester of pregnancy. Some treatment failures have occurred when treating *S. Mansoni* infection with praziquantel. In such refractory cases, oxamniquine, given at a dose of 10mg/kg, twice on the same day may be effective.

Persons traveling to endemic areas should be advised of the risk of schistosome infection as a result of freshwater contact, especially in marshes, shallow lakes and streams, or by whitewater rafting or canoeing. Schistosomiasis is not just a rural disease, and is now known to be endemic in a number of large African cities. There is currently no vaccine available against human schistosomes. Although the clinical outcome in travelers is usually complete recovery, hospitalization is sometimes necessary and symptoms can be severe. Transverse myelitis with subsequent paraplegia has been reported in travelers in Africa.

If skin contact with water cannot be avoided, some measures can be taken to avoid cercarial penetration. Before water exposure, the use of skin cleansers containing hexachlorophene may be effective, as is the use of soap while bathing. After water exposure, a rapid rubdown with a dry towel may reduce the risk of cercarial penetration. Applying alcohol to the exposed skin is also effective. Water for bathing can be made safer by storing it in a tank for at least 48 hours or heating it to 50 degrees C for 5 minutes. Both of these methods significantly reduce the number of infective cercariae. Finally, there is some evidence of anticercarial activity in vitro[8] and in vivo[9] using DEET, although larger trials are needed to establish efficacy.

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Bibliography

1. Ruffer M. Note on the presence of Bilharzia Haematobium in Egyptian mummies of the twentieth dynasty (1250-1000 B.C.). Br Med J. 1910; 1:16.
2. Deelder AM, Miler Rl, de Jonge N, Krijger FW. Detection of antigen in mummies. Lancet. 1990; 335:724-725.
3. Grysells B, Stelma FF, Talla I, van Dam GJ, Polman K, Sow S, et al. Epidemiology, immunology and chemotherapy of Schistosoma mansoni infections in a recently exposed community in Senegal. Trop Geogr Med. 1994;46:209-219.
4. Cetron MS, Chitsulo L, Sullivan JJ, et al: Schistosomiasis in Lake Malawi. Lancet 348:1274-1278, 1996
5. Visser LG, Polderman AM, Stuiver PC: Outbreak of schistosomiasis among travelers returning from Mali, West Africa. Clin Infect Dis 20:280-285, 1995
6. Anonymous: Schistosomiasis in U.S. Peace Corps volunteers—Malawi, 1992 [published erratum appears in MMWR 42:615, 1993]. MMWR 42:565-570, 1993
7. Joubert, JJ, Evans, AC, Schutte, CHJ. Schistosomiasis in Africa and International Travel. J Travel Med. 2001; 8:92-99.
8. Secor WE. Short report: prevention of Schistosoma mansoni infections in mice by the insect repellents AI3-37220 and N,N-diethyl-3-methylbenzamide. Am J Trop Med Hyg. Jun 1999; 60(6): 1061-2.
9. Salafsky B. Development and evaluation of LIPODEET, a new long-acting formulation of N, N-diethyl-m-toluamide (DEET) for the prevention of schistosomiasis. Am J Trop Med Hyg. Nov 1999; 61(5): 743-50.

(Larry and Rob are full time faculty for the Brown University Emergency Medicine Residency Program, based at Rhode Island Hospital in Providence, Rhode Island. In addition, they are diplomates of the School of Tropical Medicine at the Royal College of Surgeons, Dublin Ireland. Rob also has an MPH from Harvard University, and co-directs the Injury Prevention Center at Rhode Island Hospital. Together, they started a Travel Medicine Clinic this past year (TravelCare, Inc.), within the confines of a local Freestanding Urgent Care Center.)

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Cost of Examination: We are in the process of determining the cost of the examination. This information will be published in the Candidate Bulletin, which will be available early in 2002. We will also post this and other information on the website as it becomes available.

Acknowledgement: The ISTM examination subcommittee gratefully acknowledges GlaxoSmithKline for their generous support of this endeavor. GSK has provided an educational grant to help fund the development of the examination. Their support has enabled us to retain expert consultants to guide this project, evaluate questions, and perform a psychometric analysis of the examination. This process will ensure that this examination meets rigorous standards and is statistically valid.

Membership Wide E-mail Distribution

Periodically the ISTM sends out membership wide e-mails announcing new initiatives, updates on upcoming ISTM meetings, the availability of NewsShare, and on other Society-related subjects. Increasingly, institutions and internet providers are installing anti-spam software which recognizes and blocks e-mail messages with more than a few recipients. For this reason many of you may not get such ISTM e-mails. We have no immediate solution for this problem. For the most part, these announcements will also be carried in NewsShare which comes out every 2 months on the ISTM Web Page at www.istm.org.

Obituary

Professor Margaretha Isaacson, a popular and active member of ISTM, passed away recently in Johannesburg, South Africa. Although a diminutive figure physically, Professor Isaacson had immense stature internationally in both tropical medicine and in the broader medical academic communities. Born in the Netherlands, Professor Isaacson survived childhood internment in a Nazi concentration camp. Shrugging off a childhood whose horrors cannot even be imagined by most of us, she immigrated to Israel at the time of the state's creation. From there she found her way to South Africa and her career in tropical medicine. Margaretha was involved in the investigation and documentation of the very first Ebola outbreak known to medical science. She remained involved in ongoing studies into this feared disease, and Africa's other viral haemorraghic fevers.

Margaretha's interests also included plague, and many residents of northern Namibia can thank her for being instrumental in helping to contain this disease. Prior to that she was involved in the global campaign to eradicate smallpox. At the time of her death, she was a consultant to the World Health Organization on biological warfare.

I was privileged to have been taught by Professor Isaacson, who set the highest standards integrating the art of clinical practice with the rigor of scientific investigation. A wealth of irreplaceable clinical experience and a great teacher have been lost.

Stephen Toovey, MD
Santon, South Africa

P. Falciparum Malaria in Children

Scott J. Cohen, M.D.

Plasmodium Falciparum malaria remains a major global health threat to children. Along with respiratory disease, dehydration, measles and malnutrition, malaria is one of the top five killers of children in the tropics. The increasing occurrence of drug resistance only exacerbates this tragedy.

Severe malaria in children, especially in children under 5 years of age, can develop quite rapidly and progress to multi-system organ involvement if prompt diagnosis and treatment are not instituted. Any child, who is febrile in an area endemic for malaria, should be tested for this infection. If no diagnostic facilities are available, then empiric therapy should be instituted. If facilities are available for thick and thin smears then a febrile child who is ill appearing, should be started on anti-malarial treatment while awaiting laboratory results.

The diagnosis of malaria in children may be difficult. Many of the symptoms may represent other diseases. Also, many children have a baseline parasitemia, which may be clinically insignificant relative to their presenting symptoms. Fever may be variable and not synchronized; vomiting and diarrhea may represent an intestinal infection. Many causes of anemia are present in the tropics and may not necessarily be from malaria. And, febrile seizures, hypoglycemia, epilepsy, and bacterial meningitis may all mimic the presentation of cerebral malaria.

Although any child may be vulnerable to all of the complications of severe malaria seen in adults, the four most common complications in children are:

- Cerebral malaria
- Severe anemia
- Metabolic acidosis (presenting as respiratory distress)
- Hypoglycemia

MANAGEMENT

GENERAL PRINCIPLES:

- Assess Airway, Breathing, Circulation
- Monitor vital Signs
- Assess level of consciousness and general state of health
- Assess level of hydration
- Check blood sugar immediately
- Do Thick and thin films
- Check hemoglobin or hematocrit
- Consider lumbar puncture for bacterial meningitis

IMMEDIATE INTERVENTIONS:

- Airway, Breathing, and Circulation resuscitation if warranted
- Treat seizures
- Correct hypoglycemia
- Restore intravascular volume
- Nasogastric tube if child is unconscious
- Begin empiric treatment for P. Falciparum
- Treat fever
- Consider empiric antibiotic treatment

CEREBRAL MALARIA

CLINICAL PRESENTATION:

- Fever, decreased activity, refusing food or drink, emesis
- Brief period of 1-2 days prodromal symptoms prior to coma
- Seizures, nystagmus, salivation, myoclonic activity
- Hypoperfusion, cold extremities, shock

MANAGEMENT:

- See “Immediate Interventions” above
- Meticulous nursing care
- Nurse patient in lateral position to avoid aspiration
- Manage nasogastric tube
- Turn patient every 2 hours to prevent bed sores
- Strict records intake and output
- Monitor urine volume, spec. gravity, and asses for hemoglobinuria

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Differences between adults and children in severe malaria

SIGN OR SYMPTOM	Adults	Children
History of cough	Uncommon	Common
Convulsions	Common	Very common
Duration of illness	5 - 7 days	1 - 2 days
Resolution of coma	2 - 4 days	1 - 2 days
Neurological sequelae	< 5%	> 10%
Jaundice	Common	Uncommon
Pulmonary edema	Uncommon	Rare
Renal failure	Common	Uncommon
Pretreatment hypoglycemia	Uncommon	Common
CSF opening pressure	Usually normal	Usually raised
Respiratory distress (from metabolic acidosis)	Sometimes	Common
Abnormal brain stem reflexes	Rare	Somewhat common
Bleeding problems	up to 10%	Rare

"P. Falciparum Malaria in Children," continued from page 6

- Meticulous attention to IV fluid rate to avoid overly rapid infusions
- Vital signs and Glasgow coma scale assesment every 4 hours
- Fever reduction with fans, tepid sponging, and medications
- Monitor blood glucose every 4-8 hours
- Packed red blood cell transfusion if severe anemia present

SEVERE ANEMIA

CLINICAL PRESENTATION:

- Assess effect of anemia on clinical presentation, rather than an absolute hemoglobin value
- A rapid drop in RBC's from a high parasitemia will result in:
- Shock/Circulatory collapse
- Metabolic Acidosis and respiratory distress from hypoxemia

MANAGEMENT:

- Generally, a child who presents with a hemoglobin level of < 4.5gm/dl should be transfused with 10-15cc/kg of packed red blood cells immediately
- A child with a hemoglobin level of 4-6 gm/dl and shows signs of circulatory compromise, respiratory distress, impaired consciousness, or high parasitemia (>20%), should be transfused immediately

METABOLIC ACIDOSIS/ RESPIRATORY DISTRESS

CLINICAL PRESENTATION

- Tachypnea
- Intercostal and subcostal retractions
- Circulatory compromise/ shock

MANAGEMENT:

- Secure intravenous or intraosseous line
- Correct cause of acidosis:
  - Dehydration
  - Anemia
  - Shock
- Bolus 20cc/kg of Saline as needed to restore circulating volume
- Packed red blood cell transfusion as indicated
- Close and serial monitoring of level of consciosness, hydration, anemia, and blood glucose

HYPOGLYCEMIA

CLINICAL PRESENTATION:

- Common in children under age 3 yrs. with malaria
- Commonly associated with seizures, hyperparasitemia, and coma
- Easily overlooked as it may mimic symptoms of cerebral malaria

MANAGEMENT:

- 0.5gm/kg IV of Dextrose: (5cc/kg of D10W) (Dextrose 10g/100cc solution.)
- Give initial bolus over ~10-15 minutes
- Maintenance infusion of 5% dextrose should follow initial bolus, to prevent further hypoglycemia
- May give via nasogastric tube if parenteral routes unavailable
- Serial monitoring of blood glucose levels

PHARMACOLOGIC TREATMENT OF P. FALCIPARUM MALARIA IN CHILDREN

IF IV TREATMENT IS POSSIBLE:

- Loading Dose: 20mg/kg Quinine IV diluted in 10mg/kg Nl. saline; give over 4-6hrs.
- Do not give loading dose if child received quinine, quinidine, or mefloquine in past 12hrs
- Maintenance Dose: 12 hours after loading dose infused, give Quinine 10mg/kg IV, infused over 2 hrs.
- Repeat this dosing every 12 hours.
- When patient can tolerate PO's, give Quinine 10mg/kg (600mg maximum.) every 8 hrs to complete a 7 day course.

IF IV TREATMENT NOT POSSIBLE:

- Loading Dose: 20mg/kg quinine diluted in 60mg/ml saline; inject IM in thighs
- Maintenance Dose: 10mg/kg IM every 12 hrs until able to take oral medications.

IF NO PARENTERAL TREATMENT POSSIBLE:

- Quinine tablets 10mg/kg by mouth or nasogastric tube every 8 hours to complete 7-day course
- Refer to higher level of care if possible

ALTERNATIVE ORAL TREATMENTS:

- Sulfadoxine 25mg/kg, and pyrimethamine 1.25mg/kg, single oral dose after 3 days of quinine
- Mefloquine 15mg/kg orally, single dose; then 10mg/kg orally in 24 hrs if patient remains ill

REFERENCES

Management of Severe Malaria; A Practical Handbook

World Health Organization, 2nd Edition, 2000.

O'Dempsey, Tim. *Malaria in Children*. Africa Health (supplement). Sept. 2000; 21-26.

Bell, Dion; Tropical Medicine. Blackwell Science, Ltd. 4th Edition. 1995.

(Scott is a general pediatrician living in Oakland, California. He is involved in both inpatient and outpatient services and has been a clinical instructor to pediatric residents and medical students since l993. He has a strong interest in international health. He is currently volunteering for three months in the rain forest in Eastern Guatemala, working with indigenous families. Scott is also the Director of a new organization, Global Pediatric Alliance; a non-profit group offering pediatric conferences and seminars for all levels of practitioners in developing countries.)

Calendar: Travel Medicine Conferences, Courses, Educational Travel

Conferences

Feb 10-13

Winter Wilderness and Travel Medicine Course. Big Sky, Montana, February 10-13, 2002. Cold weather aspects of travel and wilderness medicine. Wilderness Medical Society, 3695 E. Fountain Blvd., Ste. A1, Colorado Springs, Co 80910. Contact WMS Meetings Plus 1-800-800-6819. Email: wms@wms.org Web address: www.wms.org

Feb 25-March 1

8th Swiss International Short Course on Travellers' Health. Basel, Switzerland. February 25 – March 1, 2002. Organized by the Swiss Tropical Institute and under the patronage of the International Society of Travel Medicine A 1-week course providing comprehensive training in all aspects of travel medicine. Official language: English. Contact: Swiss Tropical Institute, Course Secretariat, Socinstrasse 57, CH – 4002 Basel, Switzerland. Tel: +41 61 284 82 80. Fax: +41 61 284 81 06. Email coursessti@unibas.ch Web address: www.sti.unibas.ch

April 8-12

Travel Medicine: Short Course. London, UK April 8-12, 2002. London School of Hygiene and Tropical Medicine (LSHTM.) The course is designed for general practitioners and nurses who provide pre-travel health service and want to upsate their knowledge and skills. Registry LSHTM, 50 Bedford Square, London WCIB 3DP, UK. Tel: +44(0)20 7299 4648. Fax: +44(0)20 7323 0368. Email: shortcourse@lshtm.ac.uk Internet: http://www.lshtm.ac.uk

April 13-17

International Conference on Travel Medicine and 2nd International SHEA (Society for Healthcare Epidemiology of America) Training Course in Healthcare Epidemiolgy. Riyadh, Kingdom of Saudi Arabia. April 13-17, 2002. "Global Travel: The Raptures, The Risks." Topic to be discussed: travel epidemiology; venomous snakes. Hajj-related diseases; drug resistant diseases. International Faculty including president and two past presidents of the ISTM. In collaboration with WHO, ISTM, and other organizations. Contact: Conference Coordinator, Academic Affairs, P.O. Box 22490, Riyadh 11426 Tel: 252-0088 ext 2328 Fax: 252-0040 E-mail accaff1@ngha.med.sa Website: http://academic.ngha.med.sa

April 24-27

5th Wilderness and Travel Medicine Meeting. Santa Fe, New Mexico. April 24-27, 2002. Update on all important, recent happenings in travel and wilderness medicine. Sponsored by the Wilderness Medical Society and University of California, San Diego Continuing Medical Education (CME) Program. Contact: CME, 9500 Gilman Drive, San Diego, CA 92110. Tel 858-534-3940. Fax: 858-534-7672. Email: ocme@ucsd.edu; Web address: www.wms.org

May 15-18

III European Conference on Travel Medicine: Travel and Epidemics. Florence, Italy. May 15-18, 2002. A broad overview of the latest in travel medicine from leaders in the field. Sponsor: WHO Collaborating Centre for Tourist Health. Official Language: English. Contact: Dr. Walter Pasini Viale Dardanelli, 64 47900 Rimini, ltaly Tel. +39-0541-24301 or +39-0541-53209. Fax +39-0541-25748. E-mail: wpasini©rimini com. Or contact: Conference Secretariat: Travel Agency Girovagare, Viale Milton n. 81, 1- 50129 Firenze, Italy. Tel: 39 055 494949. Fax: 39 055 476393.

May 22-24

3rd Scandinavian Forum for Travel Medicine 2002. Copenhagen, Denmark. May 22-24, 2002. Sponsors: Travel medicine societies in Denmark, Sweden and Norway in collaboration with WHO. A focus on the scientific basis for travel medicine through state-of-the-art reviews, symposia, and free communications. Health risks when traveling to Eastern European countries. Official language: English - with parallel sessions in Scandinavian languages. Contact: Conference secretariat: ICS A/S Copenhagen, Strandvejen 171, P.O. Box 41, DK-2900 Hellerup Denmark. Tel: +45 3946 0500 Fax: +45 3946 0515. Email: forum2002@ics.dk Web address: www.ics.dk

IMPORTANT DATES

Conference	*May 7-11, 2003*
Early Registration	*December 2002*
Regular Registration	*March 2003*
Abstract Submission	*January 2003*
Hotel Reservation	*March 2003*

Calendar (continued)

Sept 8-12

Third European Congress on Tropical Medicine and International Health. Lisbon, Portugal September 8-12, 2002. "Tropical Medicine: A Global Challenge." Under the auspices of the Federation of the European Societies for Tropical Medicine and International Health. Hosted by the Instituto de Higiene e Medicina Tropical. his Conference will concentrate on tropical medicine, travel medicine, migration, medicine, and international health , involving different experts to explore future innovative collaboration. Official language: English. Local Committee Chairman: Professor Dr. F. Antunes, Instituto de Instituto de Higiene e Medicina Tropical, Rua da Junqueira, 96 PT-1600 Lisbon Tel: ++351-21-365-2638 Fax: ++351-21-797-6242 Email: ip231874@ip.pt Web address: www.kit.de/tropical2002

Oct 22-25

IV Biennial Asia Pacific Travel Health Conference. Shanghai, China: October 22-25, 2002. Travel Health in the Asia Pacific Region: New Frontiers and Challenges. Sponsor: Asia Pacific Travel Health Society Official language: Official language: English – with simultaneous translation of the plenary meetings into Chinese. Contact: Ms. Zhou Yifan, Secretariat of 4APTHC, Room 1705, No. 2669 Xie Tu Road, Shanghai 200030 China. Tel: 86-21 64398193. Fax: 86-21 64398194. Email: apthc2002@sh163.net Web address: www.2002APTHC.NET

May 7-11

CISTM8 8th Conference of the International Society of Travel Medicine. New York. May 7-11, 2003. Contact: CISTM8 Conference Secretariat: Talley Management Group, Inc., 19 Mantua Rd. Mt. Royal, NJ 08061 USA. Tel: (856) 423-7222 Ext 218. Fax: (856) 423-3420. Web address: www.istm.org.

Courses/Educational Travel.

Feb 18-22

Siem Reap (Angkor Wat), Cambodia. Conference date: February 18-22, 2002. (Travelling date: February 15-25, 2002.) CME on Travel and Tropical Medicine. Accredited by the University of Toronto. Sponsored by The Centre for Travel and Tropical Medicine, Department of Medicine, Toronto General Hospital. Course organizer: Kevin C. Kain, MD, FRCPC, Director, Centre for Travel and Tropical Medicine, EN G-224, Toronto General Hospital, 200 Elizabeth Street. Toronto, ON, Canada M5G 2C4, Kevin.kain@uhn.on.ca Travel arrangement through: Yue Chi, Concepts East Travel, 120 Eglinton Avenue East, Suite 904 Toronto, Ontario, Canada M4P 1E2 Tel: 416-322-3387 or 1-888-302-1222. Fax: 416-322-3129. E-mail: chiyue@idirect.com

Feb 3-15

Tropical Medicine Expeditions to East Africa. Kenya, February 3 – 15, 2002. Uganda. February 24 - March 2002. Sponsors: Tropical Medicine Center, Cologne, Germany, University of Nairobi, Kenya, and University of Makerere, Kampala, Uganda. Official language: English. Expedition designed for a limit ed number of physicians, public health experts, nurses. Visits to many hospitals and projects in urban and rural areas. Includes bedside teaching, laboratory work, and lectures in the epidemiology, clinical manifestations, diagnosis, treatment and control of all important tropical diseases. 50 contact hours. Contact: Kay Schaefer, MD. Fax: +49 221-340 49 05. E-Mail: contact@tropmedex.com Website: www.tropmedex.com

June 8-28

Medical Practice with Limited Resources. Ifakara, Tanzania. June 8-28, 2002. Organized by the Swiss Tropical Institute. Three-week course to teach clinical tropical medicine within the health facilities of tropical countries. Official language: English. Contact: Swiss Tropical Institute,

Course Secretariat, Socinstrasse 57, CH - 4002 Basel, Switzerland.

Tel: +4161 284 82 80. Fax: +41 61 284 81 06. Email: courses-sti@unibas.ch Web address: www.sti.unibas.ch

Jan 22 & March 28

The Gorgas Course in Clinical Tropical Medicine Lima, and the Andes and Amazon regions, Peru. Course scheduled for January 22, 2002, March 28, 2003, and for 2004. Sponsored by the University of Alabama and the IAMAT Foundation. Includes lectures, case conferences, diagnostic laboratory procedures, and bedside teaching in a 36-bed tropical medicine unit. Official language: English. International Faculty. 380 contact hours. Contact: David O. Freedman, M.D. Gorgas Memorial Institute, University of Alabama at Birmingham, 530 Third Avenue South, BBRB 203, Birmingham, AL 35294. Fax: 205-934-5600 Or call: The Division of Continuing Medical Education at 800-UAB-MIST (U.S.) or 205-934-2687 (from overseas) Email: info@gorgas.org Web address: www.gorgas.org.

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