433. Impact of Malaria Prophylaxis on Risk of Travelers’ Diarrhea Among International Travelers
Kathryn Lago, DO1; Kalyani Telu, MS2; David R. Trumble, MD, DrPH1; Anuradha Ganesan, MD, MPH1; Anjali Kunz, MD2; Charla Geist, DO1; Jamie Fraser, MPH1; ldrani Mitra, MS3; Tahaniyat Laman, MBBS, MH3; and Heather Yun, MD, FIDSA1; 1San Antonio Military Medical Center, Fort Sam Houston, Texas, 2Infectious Disease Clinical Research Program, Department of Preventive Medicine and Biostatistics, Uniformed Services University of the Health Sciences, Bethesda, Maryland, 3Infectious Disease Clinical Research Program, Uniformed Services University of the Health Sciences, Bethesda, Maryland, 4Preventive Medicine and Biostatistics, Infectious Disease Clinical Research Program, Uniformed Services University of the Health Sciences, Bethesda, Maryland, 5Madigan Army Medical Center, Tacoma, Washington, 6Landstuhl Regional Medical Center Landshut, Germany, 7Brooke Army Medical Center, JBSA Fort Sam Houston, Texas.

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Background. International travelers are often at risk for travelers’ diarrhea (TD) and malaria. Doxycycline has activity against pathogens causing TD but hasn’t been used as TD prophylaxis since the 1980s when resistance emerged. We evaluated the incidence of and risk factors for TD, and whether the choice of malaria prophylaxis was associated with risk of TD.

Methods. TravMil is a prospective observational study enrolling subjects presenting to six military travel clinics. We analyzed pre- and post- travel surveys from travelers to regions outside of the continental United States, Western or Northern Europe, Canada or New Zealand between July 2010 and August 2018. TD was defined as ≥3 loose stools in a 24-hour period or two loose stools and ≥2 of the following: nausea, vomiting, abdominal pain, fever, or bloody stool. Characteristics of trip and traveler, and use of malaria prophylaxis (doxycycline, other, and none) were determined to analyze risk factors for TD. A Poisson regression model with robust error variance was used to estimate relative risk of TD.

Results. A total of 3,227 travelers enrolled: 62.1% male, median age of 39 (IQR 27, 59), median travel duration 19 days (IQR 12, 49), 17.4% developed TD. 32% traveled to Africa, 40% to Asia, and 27% to the Caribbean, Mexico, Central, or South America. Military travel (46%) and vacation (40%) were most common reasons for travel. 20% traveled to Africa, 40% to Asia, and 27% to the Caribbean, Mexico, Central, or South America. 59), median travel duration 19 days (IQR 12, 49). 17.4% developed TD. 32% traveled to Africa, 40% to Asia, and 27% to the Caribbean, Mexico, Central, or South America.

Compared with taking other or no prophylaxis, use of doxycycline was associated with decreased risk of TD [RR 0.62 (0.47–0.82), P < 0.01], travel to tropical South America [RR 1.34 (1.09–1.64), P < 0.01], and duration of travel [RR 1.00 (1.00–1.01), P < 0.01]. Increased risk of TD was associated with female gender [RR 1.28 (1.09–1.50), P < 0.01], travel to tropical South America [RR 1.34 (1.09–1.64), P < 0.01], and duration of travel [RR 1.00 (1.00–1.01), P < 0.01].

Conclusion. Compared with taking other or no prophylaxis, use of doxycycline for malaria prophylaxis is associated with lower TD risk, suggesting potential changes in resistance patterns, anti-inflammatory effects, or association with other unmeasured risk factors. Doxycycline may impact TD risk independently of other risk factors.

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434. Neurocysticercosis in Houston
Megan McKenna, MD1; Matthew Stampfl, Medical Student2; Timothy Erickson, BS, MSPH1 and Jose Serpa, MD, MS1; Infectious Disease, Baylor College of Medicine, Houston, Texas, 2Baylor College of Medicine, Houston, Texas, 3National School of Tropical Medicine, Baylor College of Medicine, Houston, Texas and 4Section of Infectious Diseases, Department of Medicine, Baylor College of Medicine, Houston, Texas.

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Background. Neurocysticercosis (NCC) is a central nervous system infection that occurs by ingesting the larval form of the parasite, Taenia solium. It is the most common parasitic disease of the central nervous system in developing countries, and the most common cause of acquired epilepsy. Even though seizures are the most common presenting symptom, NCC can present with many manifestations.

Methods. This is a retrospective chart-review cohort study. Patients referred to the Neurology Clinic at Smith Clinic in Houston from January 2013 to December 2015 for a diagnosis of headache and/or seizure were evaluated. The prevalence of NCC was determined, as well as epidemiological characteristics for those referred to the neurology clinic and those with NCC. For patients with a diagnosis of NCC, further clinical data and zip codes were abstracted.

Results. A total of 16,050 visits were documented at the neurology clinic from January 2013 to December 2015. Of those, 9,317 of those visits were attributed to headache and/or seizure and included a total of 3,158 patients. A total of 33 patients had a diagnosis of NCC by ICD code alone, and of those, 29 also had a diagnosis of headache and/or seizure. All NCC patients were Hispanic/Latino, and the overall prevalence of NCC among those with a headache and/or seizure diagnosis was 0.92%. The prevalence among those with headaches was 0.25% and those with seizures was 1.37%.

Based on ArcMap software and the zip codes of those diagnosed with NCC, most cases appear in the south-central area of the city.

Conclusion. NCC has now spread to the developed world mainly due to increased migration, although sporadic cases of local transmission have also been documented. Our data could help develop a preliminary but current epidemiological profile of NCC in Houston and determine if there are areas of high prevalence within certain communities.

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436. A survey of Schistosomiasis and Strongyloidiasis Among Eritrean Immigrants to Israel

Yael Fazan, MD, MSc; Sima Simam, MD; Ronen Ben Ami, MD; David Shasha, MD; and Tamar Grossman, PhD; Infectious diseases Unit, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel; Internal Ward H, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel, 1; Department of Infection, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel, 2 and Tamar Grossman, PhD; Infectious diseases Unit, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel, 3.

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Background. Immigration from east Africa (mainly Eritrea) to Israel peaked during 2011–2013. Little is known about the prevalence of chronic parasitic diseases in this population. We performed a survey of Schistosomiasis and Strongyloidiasis among immigrants, both are parasites that can cause chronic infections, and can lead to significant morbidity and complications.

Methods. A prospective survey of adults (>18 years) from Eritrea was performed at a primary care clinic for immigrants in Tel Aviv, Israel. Participants provided written informed consent. Stool and blood samples were collected, and participants filled epidemiological and clinical questionnaires. Stool was tested by real time PCR for Strongyloides stercoralis and Schistosoma species, serum was tested for IgG antibodies against these pathogens using commercial kits (WB, LDBio Diagnostic for schistosoma, ELISA, SciMedx for Strongyloides).

Results. A total of 106 patients were included in the survey; 85% were males and 15% females, median age was 34 (IQR30–39) years, and median duration living in Israel was 7 years (IQR 6–9). Serology was positive in 55/106 (52%) for Schistosoma spp and in 1/106 (1%) for Strongyloides. Stool PCR for Schistosoma was positive in 34 of 106 (32%), and uniformly negative for Strongyloides. Risk factors for positive schistosoma serology and PCR were male gender and younger age. Other factors such as duration of residence in Israel, staying in other countries along the way to Israel, self-reported swimming in fresh water reservoirs and symptoms such as diarrhea, abdominal pain, and blood in stool were not significantly associated with Schistosoma infection.

Conclusion. We found high rate of Schistosomiasis (both by serology and PCR in stool) among Eritrean immigrants in Israel. While serology can remain positive for many years after there are no longer living parasites, high rates of positive stool PCR suggest current active infection. In contrary, chronic Strongyloidiasis was rarely detected. Empirical treatment of schistosomiasis with praziquantel should be considered for immigrants from Eritrea.

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437. Spatial Distribution of Schistosomiasis After Repeated Praziquantel Treatments in a Rural Community in Brazil

T. cati infection was widespread initially and clustered in the downstream sections of the village, where human fecal water contamination is increased. Targeting sanitation in key areas may decrease sources of transmission persistence after cessation of community-wide treatment efforts.

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438. Finding Toxocara Eggs in Park Soil From Montgomery County, Pennsylvania
Devin Stek, Student; St. Teresa of Calcutta Education Center, Schwenksville, Pennsylvania

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Background. Toxocara canis (dogs) and Toxocara cati (cats) is a parasitic worm commonly called roundworm. Toxocara eggs are spherical to oblong in shape, have a rough/pitted edge, appear brownish in color, and measures 75–90 µm (T. canis) and 65–70 µm (T. cati). This environmental surveillance study was designed to examine Toxocara contamination levels of selected parks in Montgomery County, Pennsylvania for the first time.

Methods. Six soil samples (2 cups each) were obtained from six different parks, for a total of 36 samples. Two table spoons of dried/sifted soil were added to a glass, covered with 1/4 cup of a sugar solution, stirred for 30 seconds, and let sit for 1 hour. The supernatant was transferred to a 20 mL plastic tube, capped, and let sit overnight. Three drops of surface fluid were placed on a glass slide and examined at x400 total magnification. The number of Toxocara eggs from a full grid search of the cover slip area was recorded.

Results. Overall, 35 of 36 samples tested positive for Toxocara eggs. The parks and samples varied in their levels of contamination of Toxocara eggs; smallest samples (0 and 2 eggs) from Sanatoga Park and largest samples from Pottstown Memorial Park [52 eggs – picnic pavilion] and Heather Place Park [56 eggs – tree grove]. The average number of eggs from Sanatoga Park (2.5 eggs [95% CI: 1.0, 4.0]), Gerald Richards Park (4.0 eggs [95% CI: 3.8, 6.2]), and Althouse Arboretum (4.7 eggs [95% CI: 3.3, 6.1]) were significantly lower than Manderach Park (11.7 eggs [95% CI: 9.6, 13.8]), Sanatoga, Gerald Richards, and Heather Place had similar average number of eggs (χ² = 3.97 < 5.99). Pottstown Memorial Park (18.2 eggs [95% CI: 4.1, 32.1]) and Heather Place Park (18.5 eggs [95% CI: 3.5, 23.5]) had the highest averages; both parks had very similar average number of eggs (χ² = 0.02 < 3.84).

Conclusion. This study demonstrated that Toxocara eggs could be found in every park that was tested. The number of eggs per sampled varied greatly; highest amounts in parks that could contain food droppings (e.g., picnic area) or potential bathrooms for dogs (e.g., tree grove). Some parks were significantly less infected with an average number of Toxocara eggs than other parks.

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439. Impact of Pre-Travel Consultation on Clinical Management and Outcomes of Traveler’s Diarrhea

Eugene M. Tan, MD; Jennifer St. Sauver, PhD; and Irene Sia, MD, 1; Division of Infectious Diseases, Mayo Clinic, Rochester, Minnesota, 2; Mayo Clinic, Rochester, Minnesota

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Background. International travelers are at high risk of acquiring traveler’s diarrhea. Pre-travel consultation has been associated with lower rates of infections. The objective was to study the impact of pre-travel consultation on clinical management and outcomes of traveler’s diarrhea.

Methods. This retrospective cohort study analyzed 1,160 patients diagnosed with traveler’s diarrhea at Mayo Clinic Rochester, Minnesota from 1994 to 2017. Variables included high-risk activities, post-travel care utilization, antimicrobial prescriptions, hospitalizations, and complications. Travelers were divided into those who sought (n = 256) and did not seek (n = 904) pre-travel consultation.

Results. Pre-travel consultation was associated with more post-travel infectious disease (ID) consultation [OR 3.2 (95% CI 1.9–5.4)], more stool sampling [OR 1.6 (95% CI: 1.2–2.2)], and more antimicrobial prescriptions [OR 2.8 (95% CI: 2.0–4.2)] compared with the non-pre-travel consultation group. The pre-travel consultation group had shorter hospital stays (adjusted mean 1.8 days for pre-travel vs. 3.3 days for non-pre-travel consultation group, P = 0.01) and reduced gastroenterology consultation rates (OR 0.2 [95% CI 0.06–0.97]).

Conclusion. Pre-travel and ID consultation may have facilitated appropriate management of traveler’s diarrhea, which reduced duration of hospitalization and gastroenterology consultation for prolonged or severe symptoms. These results support the important role of the ID physician in managing traveler’s diarrhea.

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440. The Mosqueraders Presenting a Multisystem Disease: Unusual and Atypical Clinical Features of Scrub Typhus in Fukushima, Japan

Masashi Fujita, PhD, 1; Izumi Nakamura, MD, 1; Naota Momma, PhD, 1; Kazuki Chiba, PhD, 1; Tatsuru Nakamura, PhD, 1; Hiromi Fujita, PhD, 1; Yosuke Tabata, PhD, 1; Department of Infectious Diseases, Department of Medicine, Okinawa Chubu Hospital, Uruma, Okinawa, Japan, 2Department of Infection