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

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Background. Immigrant 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 (IQR: 20–59) 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, 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

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Background. Schistosomiasis is to a degree a disease of contact with fecally contaminated surface waters, rather than ingestion. Repeated treatments with praziquantel reduce schistosomiasis prevalence and morbidity, however, transmission persists and prevalence of infection often recover within a few years.

Methods. In a community in rural Bahia, Brazil that straddles a shallow river, we surveyed and treated all individuals that tested positive for schistosomiasis by Kato Katz in stools in 2009, 2012, 2013, 2015, and 2017. 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. The population in the village was 460 in 2009, with minimal fluctuation to 459 in 2013 and 2015, and 465 in 2017. Prevalence of infection (as defined by Kato Katz and blood PCR) was 25%, 16%, 13%, and 1% in 2009, 2012, 2013, 2015, and 2017, respectively. Among the water contact site was registered with a handheld GPS unit. Spatial analyses were performed using QGIS software, version 2.14.

Conclusion. In this rural community in Brazil, sustained decrease in schistosomiasis prevalence was seen after multiple community-wide treatments over 5 years. Reinfection was not distributed randomly but concentrated in the downstream portion 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
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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 floatation 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 under ×400 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 Heaven 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 Heaven Place had similar average number of eggs (χ^2 = 3.97 < 5.99). Pottstown Memorial Park (18.2 eggs [95% CI: 4.1, 32.1]) and Heaven Place Park (18.5 eggs [95% CI: 3.5, 23.5]) had the highest averages; both parks had very similar average number of eggs (χ^2 = 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 sample 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
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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 1.4–1.8)], and more antimicrobial prescriptions (OR 5.4 (95% CI 3.3–8.2)] 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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