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Management of imported cutaneous larva migrans: A case series and mini-review

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Summary *Background:* Cutaneous larva migrans (CLM), a zoonotic helminthiasis imported to Canada by travelers to the tropics, causes morbidity due to severe, intractable pruritus. Treatment in Canada is only available through the Special Access Program (SAP) of Health Canada, thus, many patients are prescribed ineffective courses of non-targeted therapy.
Objective: We analyzed patients with CLM referred to our specialized Tropical Disease Unit (TDU) having failed non-targeted therapy prior to referral, and characterized demographic and travel related correlates of CLM.
Methods: Patients with CLM evaluated between June 2012 and December 2014 were identified through our SAP application log, and charts were reviewed for demographic, clinical, and travel-related data following IRB approval.
Results: 25 patients with CLM were identified: 12 women, and 13 men. Median age was 35 years (range 4–58 years). Patients had primarily acquired their CLM in the Caribbean (80%), with Jamaica being the most well represented source destination (N = 10, 40%). Reported symptoms included intense, function-limiting pruritus (N = 25, 100%) and loss of sleep (N = 3, 12%). Twelve patients (48%) with CLM had received at least 1 course of non-targeted therapy prior to referral. Non-targeted therapies included topical steroids (N = 7), cryotherapy (N = 3), oral antibiotics (N = 2), and oral mebendazole (N = 11). Median duration of symptoms was 34 days (range 5–226 days). Of 25 patients with CLM, 23 (92%) were prescribed a single 3-day course of albendazole and responded appropriately, and 2 (8%) required a second 3-day course of albendazole.
Conclusions: Although CLM is non-communicable and of little public health relevance in Canada, it causes significant morbidity. A substantial proportion of patients with CLM referred

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to our specialized TDU had a prolonged course of illness and were prescribed ineffective and non-targeted therapies. Oral albendazole or ivermectin, or topical thiabendazole, are the drugs of choice for CLM, and should be prescribed as first-line therapy.

1. Introduction

Cutaneous larva migrans (CLM) is a zoonotic helminthiasis frequently imported to Canada by travelers to beach destinations in the tropics [1—3]. In GeoSentinel Surveillance Network, EuroTravNet, and CanTravNet analyses, CLM figures prominently in the top causes of cutaneous disease among ill returned travelers, particularly in those returning from the Caribbean [1—6]. CLM causes morbidity due to severe, intractable pruritus arising from cutaneous larval migration of dog or cat hookworms, which penetrate intact skin via direct contact with contaminated soil or sand. Transmission commonly occurs while walking or lying on beaches. This larval migration and the intensely pruritic papular or serpiginous rash that it causes (Fig. 1), leads to impaired concentration, and sleep and mood disturbance. Diagnosis is assisted by history or, observation, of the lesion advancing at a rate of approximately 2.7-mm per day [7]. Targeted treatment for CLM includes either oral albendazole or oral ivermectin, yet, in Canada these medicines are only available through the Special Access Program (SAP) of Health Canada (http://www.hc-sc.gc.ca/dhp-mps/acces/drugs-drogues/sapg3_pasg3-eng.php). Thus, many patients are prescribed ineffective courses of non-targeted therapy due to lack of awareness and familiarity with the SAP process. Thiabendazole (topical or oral) is an alternative targeted therapy for CLM; however, topical thiabendazole requires thrice daily dosing for at least 10 days [8], and systemic thiabendazole is poorly tolerated, and is unavailable in Canada.

We analyzed the proportion of patients with CLM referred to our specialized Tropical Disease Unit (TDU) that had previously been given non-targeted therapy that failed, and characterized the demographic and travel related factors associated with imported CLM in this population.

Figure 1 Characteristic serpiginous erythematous plaque of CLM with focal vesicles on the lateral foot.

2. Methods

Patients with CLM seen in the TDU from June 2012 through December 2014 were identified through our SAP application log, and charts were reviewed retrospectively following Institutional Review and Research Ethics Board approval at the University Health Network. Demographic, clinical, and travel-related data were extracted and analyzed following institutional review board approval. Anonymized, de-linked demographic, clinical, and travel-related data were extracted, and entered into a MS Access database. CLM was defined as a raised, erythematous, migratory, linear or serpiginous rash in a traveler returning from a tropical destination. Cure was defined by symptom resolution and/or the absence of the need for a second course of therapy. Descriptive statistics were performed for all variables, and comparisons were made between those patients who had received at least 1 course of mebendazole prior to referral to the TDU versus those who had not. Comparison of continuous variables was made using the Mann Whitney Rank Sum test. Level of significance was set at $p < 0.05$. All statistical computations were performed using SigmaStat 2.03 software (SPSS Inc., Chicago, IL).

2.1. Mini-review

We performed a non-systematic mini-review of the English language literature using the PubMed database from inception to July 18, 2015, and the search terms "cutaneous larva migrans" and "travel" in order to contextualize our findings to what is already known about treatment of CLM. We restricted our review to studies reporting primary data on treatment, including meta-analyses, randomized controlled trials, observational studies, and case series reporting >5 patients.

3. Results

Twenty-five patients with CLM were identified through our SAP log: 12 women, and 13 men. Median age was 35 years (range 4—58 years). Patients had primarily acquired their CLM in the Caribbean (80%), with Jamaica being the most well represented source destination (N = 10, 40%). Other common source destinations included St. Lucia (N = 3), Cuba (N = 3), Barbados (N = 2), and Thailand (N = 2). Median trip duration was 8 days (range 5—56 days, IQR 7—14 days).