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Travel-Associated Parasitic Infections: Clinical Challenges in Non-Endemic Regions

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Introduction

Global travel has dramatically increased over the past few decades, with millions of individuals journeying between tropical, subtropical, and temperate climates for tourism, business, immigration, and humanitarian purposes. While international travel fosters cultural exchange and economic development, it also presents public health challenges, particularly through the importation of infectious diseases. Among these, parasitic infections including protozoa, helminths, and ectoparasites pose significant diagnostic and management issues in non-endemic regions. These infections often present with non-specific or delayed symptoms, and healthcare providers in non-endemic areas may lack familiarity with their clinical manifestations and management. The emergence of drug-resistant strains and the potential for local transmission in susceptible environments further complicate the clinical landscape. This article explores the epidemiology, diagnostic hurdles, and therapeutic challenges of travel-associated parasitic infections in non-endemic regions, while emphasizing the importance of clinical awareness, targeted screening, and preventive strategies.

Description

Parasitic infections acquired during travel are typically associated with visits to tropical and subtropical regions where sanitation, vector control, and access to healthcare may be limited. Common travel-related parasitic diseases include malaria, giardiasis, amebiasis, leishmaniasis, schistosomiasis, strongyloidiasis, and filariasis. These infections can present weeks or even months after return, making the link between travel and illness less apparent. Among the most serious and well-known parasitic infections is malaria, primarily caused by Plasmodium falciparum and Plasmodium vivax. Although largely eradicated in many high-income countries, malaria remains endemic in sub-Saharan Africa, South Asia, and parts of Central and South America. Travelers returning to non-endemic countries may present with fever, chills, headache, and gastrointestinal symptoms. In non-endemic settings, delayed diagnosis due to low clinical suspicion can lead to severe complications, including cerebral malaria, renal failure, and death. Moreover, antimalarial resistance, especially in P. falciparum, necessitates appropriate diagnostic testing (e.g., rapid diagnostic tests and peripheral blood smears) and region-specific treatment protocols. Leishmaniasis, caused by Leishmania species and transmitted by sandflies, is increasingly reported among travelers, military personnel, and immigrants. Cutaneous leishmaniasis, presenting with chronic ulcerative skin lesions, may be mistaken for bacterial or fungal infections in non-endemic regions. Visceral leishmaniasis, though rarer in travelers, poses a severe risk due to its systemic nature. Inadequate diagnostic facilities and limited access to liposomal amphotericin B or miltefosine in non-endemic areas often hinder timely treatment [1].

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Schistosomiasis, caused by blood flukes of the genus Schistosoma, is typically acquired through contact with freshwater sources in endemic regions of Africa, Asia, and South America. In returning travelers, schistosomiasis may present as eosinophilia, hematuria, or gastrointestinal symptoms, with chronic cases potentially leading to liver fibrosis, bladder cancer, or spinal cord complications. Diagnosis requires serological testing or microscopic identification of eggs in stool or urine, tests not routinely available in general practice settings in non-endemic countries. Another underrecognized but potentially severe infection is strongyloidiasis, caused by Strongyloides stercoralis. This helminth can persist in the host for decades due to autoinfection cycles. While often asymptomatic, immunosuppressed individuals may develop hyperinfection syndrome, characterized by disseminated bacterial infections, sepsis, and high mortality. In non-endemic regions, a lack of screening for Strongyloides prior to initiating immunosuppressive therapy can result in catastrophic outcomes. Several clinical and operational challenges complicate the management of parasitic infections in non-endemic areas. First, there is a general lack of clinician awareness, particularly among practitioners who are not specialists in infectious diseases or tropical medicine. Non-specific symptoms such as fever, rash, and gastrointestinal complaints are often attributed to common local illnesses, leading to misdiagnosis or delayed diagnosis. Second, diagnostic limitations impede timely and accurate identification of parasitic infections. Many standard laboratories in non-endemic regions do not perform stool ova and parasite exams, blood smears for malaria, or serologic tests for tropical diseases. In some cases, specimens must be sent to reference laboratories, resulting in significant delays.

Conclusion

Travel-associated parasitic infections are increasingly encountered in non-endemic regions, posing diagnostic and therapeutic challenges for clinicians unfamiliar with these diseases. The broad spectrum of pathogens, variable incubation periods, and non-specific presentations often lead to underdiagnoses or mismanagement. Emerging drug resistance and expanding vector ranges due to globalization and climate change further complicate control efforts. Addressing these issues requires improved clinician education, enhanced access to diagnostics and therapeutics, and robust public health strategies for surveillance and prevention. In an era of global mobility, a heightened awareness of parasitic diseases and their clinical implications is essential for timely diagnosis and effective care of returning travellers and migrant populations.

Acknowledgement

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Conflict of Interest

None.

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