



Epidemiological surveillance of imported malaria in Calgary, 2007-2011

Clara S. Lee, Dylan R. Pillai

Abstract

The increase in intercontinental travelling and migration has resulted in a notable rise in the number of malaria cases detected within the industrialized countries^{1,2}. The objective of this study was to retrospectively analyze the epidemiological situations of imported malaria in Calgary, Canada, between year 2007 and 2011. This study involved patients who tested positive for malaria in Calgary between January 2007 and December 2011. The data were gathered from Calgary Laboratory Services (CLS) electronic malaria history form database. Information was obtained on pre-travel advice, reason for travel, countries with malaria visited, types of prophylaxis taken, and types of treatment received. During the five years, a total of 168 imported malaria cases have been reported. Greater than 80% of these cases comprised of *Plasmodium falciparum* and *Plasmodium vivax* infections. The highest proportions of *P. falciparum* were contracted in Africa, and by contrast, the highest proportions of *P. vivax* were contracted in Asia. The prevalence of malaria was significantly higher in males than in females. The most common reason for travel was visiting friends and relatives (VFR), and the top three destinations for VFR were Sudan (25.0%), India (16.1%), and Nigeria (16.1%). Incidence of malaria cases were higher in certain wards of Calgary located in North East than in other quadrants. During the 5 year period, there was an increasing trend in the total number of annual imported malaria cases and in the total number of *P. falciparum* infections, with little fluctuation. Only 24.6% of the malaria patients have indicated using prophylaxis prior to their travelling and migration, increasing their risk of acquiring malaria. In order to improve health outcomes in travelers related to malaria, future public health interventions focused on recent immigrants may be necessary.

References

1. Nilles EJ, Arguin PM. Imported malaria: an update. *Am J Emerg Med.* 2012;30(6):972-980.
2. Muentener P, Schlagenhauf P, Steffen R. Imported malaria (1985-95): trends and perspectives. *Bull World Health Organ* 1999;77(7):560-566.