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Abstract (poster session)

A 12-year epidemiology report of imported malaria in Parma, Italy

A. Calderaro, C. Gorrini, S. Montecchini*, S. Rossi, C. Chezzi (Parma, IT)

Objectives: At present malaria is re-emerging as an imported disease in areas where it has been eradicated, such as Europe, due to the increasing amount of travellers and migratory flows from endemic countries. A surveillance system has been established in Italy where malaria is the most commonly imported disease, in order to prevent its endemic return and to monitor the epidemiology of imported cases. This study aimed to accurately and promptly diagnose malaria and to describe the occurrence in our area of the different involved species of plasmodia, focusing on patient clinical/epidemiological information. Methods: From 2000 to October 2011, blood samples from 1,002 patients with the suspicion of malaria were subjected to microscopy and to different nested- and Real-time PCR assays targeting plasmodial 18S-rDNA, alternatively used during the study period. Results: 227 cases of malaria were diagnosed by microscopy [189 *Plasmodium falciparum* (Pf) (83.3%), 12 *P. ovale* (Po) (5.3%), 13 *P. vivax* (Pv) (5.7%), 10 *Plasmodium* spp. (4.4%), 1 Pf/P. spp. (0.4%), 2 mixed infection (0.9 %)], whilst 234 were diagnosed by PCRs [190 Pf (81.2%), 23 Po (9.8%), 9 Pv (3.85%), 3 *P. malariae* (Pm) (1.3%), 9 mixed infections (3.85%)]. Among the 234 cases, 213 (91%) were foreigners and 21 (9%) were Italian travelling for tourism, business or humanitarian mission. The majority of the patients presented with fever (about 90%) and had no correct anti-malarial chemoprophylaxis (65%); 211 patients (90.2%) became infected in Africa (mostly West Africa), 3 (1.3%) in Indonesia, 2 (0.8%) in India, 1 (0.4%) in Amazonia, and for 17 patients (7.3%) country of origin/visit was unknown. Conclusion: Despite microscopy remains the reference diagnostic method in our experience PCR assays were the only ones allowing a correct diagnosis of malaria, particularly in cases of infections by species other than Pf and in mixed infections, resulting in a reliable description of the epidemiological picture of imported malaria in our area. In this study a high prevalence (23.3%) of imported malaria is described as an uncommon finding in a non-endemic country and involving immigrants particularly from West Africa, explaining the highest prevalence of Po cases among non-Pf infections. By the combined use of microscopy and PCR-based methods an accurate diagnosis and description of the epidemiology of imported malaria could be accomplished allowing the administration of a targeted therapy.