RESEARCH ARTICLE

A High Malaria Prevalence Identified by PCR among Patients with Acute Undifferentiated Fever in India

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Abstract

Background

Approximately one million malaria cases were reported in India in 2015, based on microscopy. This study aims to assess the malaria prevalence among hospitalised fever patients in India identified by PCR, and to evaluate the performance of routine diagnostic methods.

Methods

During June 2011-December 2012, patients admitted with acute undifferentiated fever to seven secondary level community hospitals in Assam (Tezpur), Bihar (Raxaul), Chhattisgarh (Mungeli), Maharahstra (Ratnagiri), Andhra Pradesh (Anantapur) and Tamil Nadu (Oddanchatram and Ambur) were included. The malaria prevalence was assessed by polymerase chain reaction (PCR), routine microscopy, and a rapid diagnostic test (RDT) with PCR as a reference method.

Results

The malaria prevalence by PCR was 19% (268/1412) ranging from 5% (Oddanchatram, South India) to 36% (Ratnagiri, West India). Among malaria positive patients P. falciparum single infection was detected in 46%, while 38% had P. vivax, 11% mixed infections with P. falciparum and P. vivax, and 5% P. malariae. Compared to PCR, microscopy had sensitivity of 29% and specificity of 96%, while the RDT had sensitivity of 24% and specificity of 99%.