Detection of malaria in Saudi Arabia by real-time PCR

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Malaria transmission occurs in Saudi Arabia and mainly endemic in the lowlands of Asir region, the South western Province. Imported cases have been reported. Sensitive routine laboratory techniques for rapid and accurate malaria diagnosis are therefore desirable to facilitate the identification of individuals infected with the malarial parasites and to follow up the progress of treatment of such cases with appropriate drugs. Traditional diagnosis, based on the microscopic examination of Giemsa-stained thick and thin films remains the main standard method of diagnosis used for malaria diagnosis in Saudi Arabia. Molecular diagnostic techniques based on the detection of nucleic acids (as PCR; Real-time PCR) are now highly considered. Real time-PCR a new methodology has been recently applied to detect human malaria. In this study a total of forty four samples, using whole-blood, dried blood and thick smears were examined by PCR and Real-time PCR. Both techniques showed a higher sensitivity than the microscopy. Parasites were detected in twenty nine samples out of forty four, compared to twenty six of thirty nine were positive with thin blood film. The real-time PCR assay offers a practical and positive alternative for rapid and accurate diagnosis for malaria infection. The application of such technique will be significantly valuable especially for screening for malaria infection in endemic areas.