EVALUATION OF MALARIA RAPID DIAGNOSTIC TESTS IN MADINAH, SAUDI ARABIA

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Abstract. Malaria is a parasitic disease causing high morbidity and mortality in tropical and sub-tropical regions of the world. Determination of malaria parasitemia level is essential for estimating severity of the disease. Detection of malaria in endemic regions using rapid diagnostic tests (RDTs) has been widely adopted. The study evaluated prevalence of *Plasmodium* spp. in Madinah, Saudi Arabia, determined parasite density and assessed diagnostic accuracy of RDTs. One hundred EDTA blood samples were collected from patients presenting fever or a recent history of fever and examined microscopically in parallel with two RDTs (OptiMAL-IT and AMP). Malaria was microscopically confirmed in 20% of the samples, with *Plasmodium falciparum* and *P. vivax* detected in 13 and 7% respectively and no mixed infection. Mean parasite density for *P. falciparum* and *P. vivax* was 6,357 and 5,660 parasites/μl respectively. Sensitivity of AMP and OptiMAL-IT tests was 85 and 80% respectively, and 100% specificity for both tests. In conclusion, diagnostic performance of the two RDTs were satisfactory with AMP having a slightly higher sensitivity than OptiMAL-IT test, but both RTDs were still inferior compared to microscopic examination.

Keywords: *Plasmodium falciparum, Plasmodium vivax*, AMP test, OptiMAL-IT test, parasitemia

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