**Molecular Epidemiology of Malaria in Nepal**

Parajuli K1, Khatri Y1

1Central Department of Microbiology, University Campus, Tribhuwan University, Kirtipur, Kathmandu, Nepal.

Date: 2003

**Background**

The distribution and the molecular finger print of the existing strain of the malaria and the indigenous inherent species was not yet disclosed. In this regard, molecular epidemiology of malaria in the context of Nepal is an essential area to be studied.

**Methods**

The study was carried out in Kanchanpur district from July 2003 to December 2003. A total of 676 blood samples were collected from individual malaria suspected patients attending malaria clinic, District Public Health Office and different sets of camps. Giemsa stained thin and thick blood smears were examined microscopically and compared with the Rapid Diagnostic Test which was finally followed by Polymerase Chain Reaction. The observations thus obtained were documented/analyzed and comparative study was performed.

**Results**

Among the total, 374 patients attended in malaria clinic the positive cases for malaria were 80 in which 10 cases were of *Plasmodium falcifarum* and 70 cases were of *Plasmodium vivax*. The total of 302 patients attended in the camp where the positive cases for malaria were 68 in which 27 cases were of *Plasmodium falcifarum* and 41 cases were of *Plasmodium vivax*. The sensitivity, specificity, positive predictive value and negative predictive value of the optiMAL test for diagnosis of *P. vivax* was found to be 84.61%, 100%, 100% and 77.78% respectively. Similarly, the sensitivity, specificity, positive predictive value and negative predictive value of the optiMAL test for diagnosis of *P. falcifarum* was found to be 85.71%, 100%, 100% and 92.85% respectively.

**Conclusions**

Extensive study of malaria as molecular epidemiology should be conducted for the determination of low parasitaemia and multiple infections.

**Keywords:** epidemiology; malaria; negative predictive value; optimal test; positive predictive value; rapid diagnostic test; sensitivity; specificity.