



Category: Miscellaneous

Host selection, multiple blood feeding behaviour and plasmodium parasite infection of *Anopheles* vector in Kalahandi district, Odisha, India

Barsa Baisalini Panda, Animesha Rath and R.K. Hazra*

Regional Medical Research Centre, Bhubaneswar, INDIA

*Corresponding author: rupenkh@yahoo.com

Abstract

Identification of host preference and presence of Plasmodium parasite in field collected mosquito are important parameters to measure for effective vector control of malaria. The objective of this study was to identify mammalian blood meals and Plasmodium parasite from a single mosquito by using multiplex PCR assay. The blood specific primer set for multiplex PCR of Human, Cow, Goat and Buffalo targeting mitochondrial cytochrome b was developed to identify blood meals of field collected mosquitoes. The plasmodium specific primer set for multiplex PCR of *P. falciparum*, *P. vivax*, *P. malariae*, *P. ovalae* was developed to identify presence of parasite in mosquitoes. 342 female Anopheles mosquito species viz *Anopheles culicifacies*, *Anopheles fluviatilis* and *Anopheles subpictus* were collected for analysis of blood meal and the positive human blood fed mosquito was analyzed for the presence of sporozoites. The overall human blood index was found to be 41%, 17%, 23% in *An. culicifacies*, *An. fluviatilis* and *An. Subpictus*, respectively. 150 of human blood fed mosquito were harbouring Plasmodium parasites, 1.4% of which were confirmed to *P. falciparum*. In addition to *An. Fluviatilis*, *An. culicifacies* were also found positive for malaria parasites. The present study exhibits the human feeding tendency of Anopheles vectors highlighting their malaria parasite transmission potential. The present study may serve as a model for understanding the human host preference of malaria vectors and detection of malaria parasite inside the anopheline vector mosquitoes in order to update their vectorial status for estimating the possible role of these mosquitoes in malaria transmission. The study has used PCR method and suggests that PCR based method should be used in this entire malarious region to correctly report the vectorial position of different malaria vectors.

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