ENTOMOLOGICAL ASPECTS OF MALARIA TRANSMISSION AT KATARAGAMA, A MALARIA ENDEMIC AREA IN SRI LANKA

Chandana Mendis, Sudath Weerasinghe,
Pushpa R J Herath* & Kamini Mendis
Dept. of Parasitology, Faculty of Medicine,
University of Colombo,
*Anti-Malaria Campaign, Narahenpita.

Key entomological parameters relevant to malaria transmission were continuously monitored in a comprehensive epidemiological study carried out in Kataragama from October 1986 to April 1988. Ten anopheline species were prevalent in Kataragama; they were found to be primarily zoophilic. Eight species were found to bite humans to varying degrees, 2 of the anopheline species were found to be indoor resting; these and 4 other outdoor resting species were found to be positive for circum-sporozoite (CS) antigens when tested by an ELISA using anti CS Mabs against P.Falciparum and P.vivax. The rate of man mosquito contact (Man Biting Rate) was 2.5 bites/man/night on the average and fluctuated between the wet and dry periods. There was a good positive correlation between the density of mosquitoes and rainfall pattern. The malaria incidence also correlated well with the mosquito density lagging behind MBR by about 4 weeks. Human biting anophelines were mainly exophagic (> 75%); there was a slight decrease in exophagy from wet (80% - 95%) to dry (65% - 75%) season. Human biting activity of anophelines was highly concentrated in the early half of the night. The entomological inoculation rates of 0.087 (P.vivax) and 0.327 (P.falciparum) bites/man/month reflect the low mean mosquito contact rate, exophagy, of vectors and the relatively low intensity of malaria transmission that prevails in the area compared to highly malarious areas of the world such as "tropical Africa" and the Papua New Guinea.