THE INFECTIOUS RESERVOIR OF HUMAN VIVAX MALARIA IN AN ENDEMIC REGION

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Malaria was monitored in 3500 residents in a P.vivax malaria endemic region in the Moneragla District (1). The infectious reservoir was studied by directly feeding Anopheles tessellatus mosquitoes from a laboratory bred colony, on a sample 282 vivax malaria patients who presented during the course of 17 months. The mean oocyst count per gut of fed mosquitoes was taken as an index of infectivity of a patient.

Among 5 age groups of patients considered 0-, 5-, 15-, 25- and 50+ years, the highest infectivity to mosquitoes was in the 15- year age group, the 0- year age group being the least infectious. However, gametocyte counts were highest in the 0- year age group and declined steadily with increasing age. In view of the discrepancy between the infectivity and the gametocyte counts of different age groups, we estimated the infectiousness per gametocyte of each age group (Table 1). A striking correlation was obtained between age and the infectiousness of a gametocyte, a gametocyte being least infectious in the youngest age group and increasingly infectious as age of the patien advances.

The relative contribution of the different age groups to the infectious reservoir of vivax malaria was also estimated (Table 1). The 5-, 15- and 25-year age groups contributed most to to the infectious reservoir. This information is relevant to malaria control methods based on reducing the infectious reservoir, be it chemotherapy or transmission blocking vaccines.

Table 1

Age group	Infectivity (Mean oocyst/gut)	Infectiousness gametocyte x 10^5 oocyst/10^5 gametocytes	Contribution to infectious reservoir
0-	5.12	232	10.9%
5-	8.09	622	26.7%
15-	16.72	880	31.9%
25-	13.95	1395	28.1%
50+	8.53	1421	2.5%

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References:

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