A-15 Human antibody responses to C-terminal fragments of PvMSP-1 representing potential vaccine candidates for vivax malaria

C Wickramasinghe[1], M G Dharmasiri[1], S Longacre[2], K N Mendis[3], P V Randeniya[1]

([1]*Dept. of Zoology, Univ. of Colombo, Colombo 3,* [2]*Unite d'Immunoparasitologie, Institut Pasteur, Paris, France,* [3]*Malaria Research Unit, Dept. of Parasitology, Univ. of Colombo, Colombo 8*)

The human antibody response to 2 baculovirus expressed C-terminal fragments of the *Plasmodium vivax* merozoite surface protein-1 (PvMSP-1), p42 and p19, representing potential vaccine candidates were examined during natural *P.vivax* infections using an indirect microplate ELISA. Sera from 100 acute vivax malaria patients including 50 from an endemic area with partial anti-parasite immunity (mean parasitaemia=0.09%) and 50 non-immunes from a non-endemic area (mean parasitaemia=0.27%) were assayed for total immunoglobulin (IgG and IgM). Almost all patients had antibodies against the 2 antigens indicating that these proteins are immunogenic during a natural infection. The antibody response to the p19 was significantly higher in the endemic patient compared to that of the non-endemics ($p<0.001$). However, in the endemic group itself anti-p19 antibody levels correlated positively with the blood parasitaemia ($p<0.05$), providing no evidence to implicate it in protective anti-parasite immunity.

Based on the response to the p42, the endemic patients fell into 2 discontinuous groups: high responders in whom the response was significantly greater ($p<0.001$), and non-responders in whom it was significantly lower ($p<0.05$) than of the non-endemics, suggesting an acquired non-responsiveness in the latter group following repeated infection. Furthermore the blood parasitaemia of the high responders was significantly lower than that of the low responders, suggesting that in contrast to the response to p19, the antibody response to p42 may represent either significant anti-parasite immune mechanism or that it is a marker of yet another immune response which underlies anti-parasite immunity.

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