

**Type: Invited Presentation**

Final Abstract Number: 12.003

Session: Malaria - Hot Topics

Date: Thursday, March 3, 2016

Time: 15:45–17:45

Room: Hall 6

**Malaria prevention strategies**

L. Von Seidlein

Mahidol Oxford Tropical Medicine Research Unit,  
Bangkok, Thailand

**Abstract:** Substantial gains have been made in the control of malaria; in many regions malaria has reached historically low prevalence. Still the global malaria burden remains unacceptably high and the spread of antimalarial and insecticide resistance threatens a resurgence.

A number of malaria prevention strategies have been evaluated since the turn of the century. Intermittent presumptive therapy (IPT) held initially great promise but has ultimately disappointed and has not been implemented. Seasonal malaria chemoprophylaxis has evolved from IPT and restricts presumptive therapy to the months with the highest malaria incidence. This strategy is finding increasing acceptance. Malaria vaccines have a long history but have yet to result in the roll-out of a safe, highly protective, long lasting product. The last candidate, RTS,S/AS01 held great hope but also has ultimately disappointed and the inclusion in the expanded program of immunisations has not been recommended at the end of last year. There are new vaccine candidates on the horizon but there is no reasonable hope that a vaccine can be used to prevent malaria on a population level in the near future.

The ultimate hope to prevent malaria has to be the elimination of malaria. While considered unrealistic until recently a range of novel strategies aim now at the elimination of malaria.

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Session: Malaria - Hot Topics

Date: Thursday, March 3, 2016

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**Management of relapsing *Plasmodium vivax* malaria**

C. Chu

Bangkok, Thailand



**Abstract:** *Plasmodium vivax* (*P.vivax*) endemicity covers large and diverse geographical regions. Transmission is lower than *Plasmodium falciparum*, however, relapses caused by hypnozoite forms increase the number of infections and sustain transmission. Resistance against chloroquine is increasing and assessment of efficacy is confounded because recrudescence, relapse and reinfection cannot be distinguished reliably. Background incidence of new *P.vivax* infections are needed for comparing efficacy of treatment regimens. Primaquine is the only currently widely available treatment effective against relapses (hypnozoite stage) of

*P.vivax* and assessment of its radical curative efficacy using currently recommended dosing is required. Optimising primaquine regimens may be necessary to improve adherence in some populations. The assurance of primaquine safety in persons with glucose-6-phosphate-dehydrogenase (G6PD) deficiency is essential if deployed universally for malaria elimination.

**Methods:** Between March 2010 and July 2015 a series of studies were conducted in northwestern Thailand along the Myanmar border. In the first study, a rolling cohort of 200 healthy subjects with a history of *P.vivax* were given primaquine for radical cure and followed until a new *P.vivax* infection. The overall incidence of new *P.vivax* infection was 0.13 infections per person-year. In a parallel study 650 subjects with *P.vivax* malaria were randomized to artesunate, chloroquine or chloroquine+primaquine (only G6PD normal subjects) and followed for one year. At least one recurrence with *P.vivax* occurred in over 70% subjects in non-primaquine arms and in 18% subjects taking primaquine. The burden of relapse was calculated to be 78%. In a third study, 680 G6PD normal subjects were randomized to chloroquine+primaquine 7 days (1mg/kg/day), chloroquine+primaquine 14 days (0.5mg/kg/day), dihydroartemisinin-piperaquine+primaquine 7 days or dihydroartemisinin-piperaquine+primaquine 14 days. Recurrences within one year follow up with *P.vivax* were treated with a standard dose of chloroquine+primaquine 14 days (0.5mg/kg/day). Subjects with at least one recurrence were not significantly different between the 7 and 14-day primaquine regimens, although non-inferiority of the 7-day regimen was inconclusive.

**Conclusion:** Relapse contributes substantially to the burden of *P.vivax* malaria. High dose primaquine (7mg/kg) over 7 or 14-days are efficacious and universal deployment is likely necessary for *P.vivax* elimination. However, safety of these regimens in persons with G6PD deficiency requires confirmation.

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Session: New Insights on Rickettsial Infections

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Room: G.01-03

**Epidemiology and ecology of rickettsial infections**

R. Premaratna

University of Kelaniya, Faculty of Medicine, Ragama,  
Sri Lanka

**Abstract:** Rickettsiae are obligatory intracellular bacteria, transmitted to vertebrates by arthropod vectors, primarily by fleas and ticks. A rapid increase in the incidence of four endemic rickettsioses; Rocky Mountain spotted fever, Mediterranean spotted fever, North Asian tick typhus, and Queensland tick typhus was noted since 1970s and for Japanese spotted fever, since its discovery in mid-1980s. As a result, spotted fever group of rickettsiae (SFG) currently include over 25 formally recognized species. Elevated attention to rickettsial diseases, advent and adaptation of new molecular tools used for field and laboratory studies in the 1990s and increase in funding support have lead to this second pronounced increase in the discovery of novel species and the increase in incidence of tick-borne rickettsial diseases in the last 40 years. Change in ecological factors which determine the vector species