

The WWARN Vivax Surveyor: open access online mapping database for clinical trials of *Plasmodium vivax*

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Recurrent infection with *P. vivax* is associated with significant morbidity and mortality. Although radical cure can reduce recurrent infection, it is confounded by antimalarial resistance and the lack of safe and effective hypnozoitocidal treatment. The WWARN Vivax Surveyor documents the available literature of published clinical trials of *P. vivax*, providing an up-to-date, online, open access tool to view and download available information. A systematic review was conducted to identify prospective *P. vivax* therapeutic clinical trials with at least 28 days follow-up published between January 1960 and October 2016. Treatment arms and evidence of chloroquine resistance based, on the risk of recurrent *P. vivax* by day 28 and whole blood chloroquine concentrations, were mapped to trial sites. Since 1960, a total of 1,152 antimalarial clinical trials with a minimum 28 days follow-up have been published, of which 230 (20.0%) enrolled patients with *P. vivax* and were included. Trials were conducted in 38 countries: 168 (73.0%) in the Asia-Pacific, 13 (5.7%) in Africa and 43 (18.7%) in the Americas. The proportion of antimalarial trials assessing *P. vivax* rose from 10.7% (12/112) in 1991-1995, to 24.9% (56/225) in 2011-2015. Overall, 188 (81.7%) *P. vivax* trials included a chloroquine treatment arm, either alone or in combination with primaquine, and 107 (46.5%) trials included a chloroquine treatment arm with early primaquine to assess radical cure. There has been a recent increase in treatment arms with artemisinin derivatives. Of the 131 sites in which chloroquine resistance could be quantified resistance was present in 59 (45.0%) sites in 15 endemic countries. Over the last 20 years there has been a substantial increase in clinical research on the treatment of *P. vivax*, which has generated a greater awareness of the global extent of chloroquine resistance. The review also highlights the lack of safe and effective hypnozoitocidal regimens and information gaps in some regions. The open access, interactive WWARN Vivax Surveyor provides up to date information of areas where drug resistant *P. vivax* is emerging.