Primaquine Efficiacy and Safety for Vivax Malaria: Thailand

WWARN Vivax Primaquine Study Group. For further information go to https://www.iddo.org/wwarn/vivax-reports

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Introduction

This report is a condensed version of the full report assessing the effect of primaquine dose on efficacy, safety and tolerability. This report provides an overview of the results only. For more detail please refer to the standard report.

Table 1: Studies included in this report

Author-year	Follow up (days)	Treatment arms	PQ treatment arm details	Patients available
Chu-2018	365	No PQ, PQ 7 mg/kg	Cq_Pq_7.0_14d_D0	420
Longley-2016	270	PQ 3.5 mg/kg	Cq_Pq_3.5_14d_D1	43
Llanos-Cuentas-2019	180	PQ 3.5 mg/kg	Cq_Pq_3.5_14d_D1	8
Lacerda-2019	180	No PQ, PQ 3.5 mg/kg	Cq_Pq_3.5_14d_D1	30
Pukrittayakamee-2010	28	PQ 3.5 mg/kg, PQ 7 mg/kg	Pq_7.0_7d_D0, Pq_3.5_7d_D0	85
Llanos-Cuentas-2014	180	No PQ, PQ 3.5 mg/kg	Cq_Pq_3.5_14d_D1	32
Chu-2019	365	PQ 7 mg/kg	DP_Pq_7.0_7d_D0, DP_Pq_7.0_14d_D0, Cq_Pq_7.0_7d_D0, Cq_Pq_7.0_14d_D0	654

∗ *ACT – artemisinin-based combination treatment; As – artesunate; AL – artemether-lumefantrine; Aq – amodiaquine; Cq – chloroquine; DP – dihydroartemisinin-piperaquine; GI – gastrointestinal; Mf – mefloquine; PQ/Pq – primaquine; SP – sulfadoxine-pyrimethamine;*

Primaquine treatment code describes (schizontocidal drug)(hypnozoitocidal drug)(total primaquine dose)(duration of primaquine treatment eg 14d = 14 days)(primaquine start day)

Efficacy

Inclusion in the efficacy analysis was restricted to studies with 42 days or more follow up and patients with data on day 0 parasitaemia. In this report, the efficacy analysis includes 1187 patients across 8 study sites, from 6 studies.

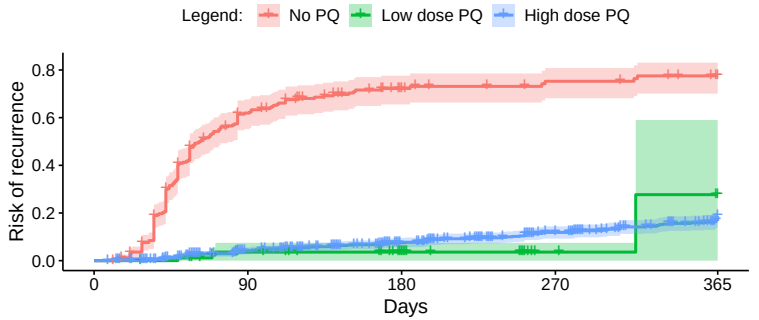

Figure 1: Kaplan-Meier figure of cumulative risk of recurrence between day 7 and day 365 for primaquine treatment category. Please interpret the results of this figure with caution as there may not always be paired treatment comparisons in the original studies contributing to these pooled results.

Low dose PQ - total primaquine 2 - <5 mg/kg;
High dose PQ - total primaquine ≥ 5 mg/kg

Haematology

The haematology analysis included 1219 patients across 8 study sites, from 6 studies. The following analysis only considers the 1194 patients across 6 studies with G6PD activity $\geq$ 30%.

Table 2: Summary of haematology outcomes, stratified by daily primaquine dose

	Primaquine daily dose level				
	Nil	**Low**	**Intermediate**	**High**	**Total**
	(N=225)	**(N=46)**	**(N=552)**	**(N=371)**	**(N=1194)**
Drop in Haemoglobin of >25% AND Hb below 7 g/dL:					
No	37 (16.4%)	42 (91.3%)	367 (66.5%)	365 (98.4%)	811 (67.9%)
Yes	0 (0.0%)	0 (0.0%)	4 (0.7%)	5 (1.3%)	9 (0.8%)
Missing	188 (83.6%)	4 (8.7%)	181 (32.8%)	1 (0.3%)	374 (31.3%)
Drop in Haemoglobin of >5 g/dL from baseline OR Hb below 5 g/dL:					
No	37 (16.4%)	42 (91.3%)	364 (65.9%)	365 (98.4%)	808 (67.7%)
Yes	0 (0.0%)	0 (0.0%)	6 (1.1%)	5 (1.3%)	11 (0.9%)
Missing	188 (83.6%)	4 (8.7%)	182 (33.0%)	1 (0.3%)	375 (31.4%)

The following figure provides the estimated change in haemoglobin (Hb) from day 0, for different Primiquine doses at day 2/3, adjusted for baseline haemoglobin, age, sex and day 0 parasitaemia and allowing for clustering by study site.

Care should be taken when interpreting these results, as model assumptions have not been fully assessed in this automated report format.

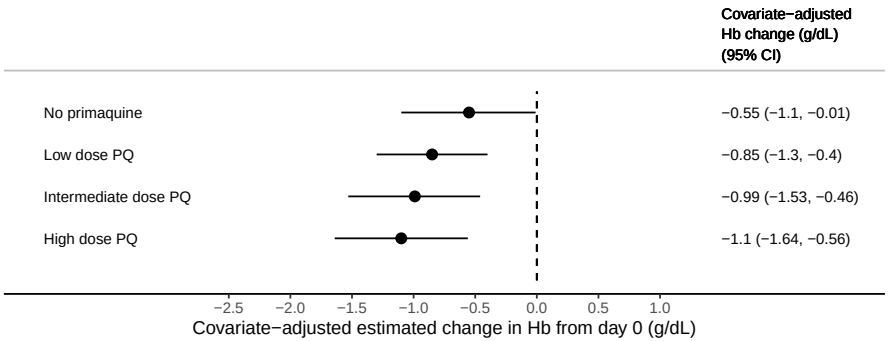

Figure 2: The covariate-adjusted estimated change in Hb from baseline to days 2-3, between primaquine daily dose groups, in patients with G6PD activity $\geq$30%.

Low dose daily primaquine (<0.375 mg/kg/day)
Intermediate dose daily primaquine ($\geq$0.375 & <0.75 mg/kg/day)
High dose daily primaquine ($\geq$0.75 mg/kg/day).