**Additional File 3. Sensitivity analysis**

In some studies, estimated gestational age (EGA) in weeks (without days) was available at malaria episodes but not at delivery. When the EGA at delivery was calculated from the EGA at malaria episode, the difference of a maximum of seven days (i.e. day 0 or day 6 of the same week) can affect the binary category of PTB and SGA. For those studies, results assuming day 0 of the week were presented as the primary analyses, and those assuming day 6 of the week were presented as sensitivity analyses.

For PTB, the overall pooled proportion of extremely PTB (<28.0 weeks), very PTB (≥28 to <32.0 weeks) and moderate to late PTB (≥32.0 to <37.0 weeks) was 0·0% (5/2610, 95% CI 0·0 to 0·0, $I^2$ 0%), 0·1% (34/3279, 95% CI 0·0 to 0·4, $I^2$ 0%) and 7·8% (438/4147, 95% CI 5·6 to 10·3, $I^2$ 81%), respectively. The results of the univariable and multivariable analyses were similar to the primary analysis results (Additional Table 3-1), except that malaria transmission intensity was not associated with the risk of PTB.

For SGA, the overall pooled proportion of SGA was 38·1% (1310/3674, 95% CI 32·7 to 43·6, $I^2$ 88%). The results of the univariable and multivariable analyses were similar to the primary analysis results (Additional Table 3-2).

Additional Table 3-1. Univariable and multivariable logistic regression on the risk of moderate-to-late preterm birth assuming day 6 on the week

| Baseline characteristic | Proportion (%) | Univariable | | Multivariable (Complete case) | | Multivariable (MI) | |
|---|---|---|---|---|---|---|---|
| | | OR (95% CI) | p-value | aOR (95% CI) | p-value | aOR (95% CI) | p-value |
| Treatment | | | | | | | |
| AL | 114/1043 (11%) | Reference | | Reference | | Reference | |
| AAP | 4/76 (5%) | 0.62 (0.19–2.01) | 0.42 | 1.77 (0.33–9.45) | 0.51 | 0.55 (0.16–1.89) | 0.34 |
| AS | 15/174 (9%) | 1.57 (0.72–3.40) | 0.26 | 1.58 (0.61–4.12) | 0.35 | 1.27 (0.55–2.91) | 0.57 |
| ASAQ | 82/750 (11%) | 0.95 (0.69–1.31) | 0.77 | 1.03 (0.71–1.49) | 0.87 | 0.97 (0.70–1.34) | 0.84 |
| ASMQ | 81/927 (9%) | 0.95 (0.69–1.32) | 0.77 | 0.78 (0.52–1.16) | 0.21 | 0.91 (0.65–1.28) | 0.59 |
| ASSP | 21/148 (14%) | 1.81 (0.88–3.71) | 0.11 | 0.89 (0.36–2.20) | 0.80 | 1.67 (0.78–3.58) | 0.19 |
| DP | 102/807 (13%) | 1.19 (0.88–1.61) | 0.26 | 1.20 (0.87–1.67) | 0.27 | 1.14 (0.83–1.56) | 0.42 |
| Q | 15/171 (9%) | 1.28 (0.63–2.59) | 0.50 | 2.40 (0.59–9.71) | 0.22 | 1.53 (0.72–3.23) | 0.27 |
| QC | 4/51 (8%) | 1.18 (0.32–4.44) | 0.80 | No data | | 1.18 (0.29–4.81) | 0.82 |
| EGA at malaria episode | | | | | | | |
| 4.0–13.9 | 5/38 (13%) | 4.34 (1.56–12.06) | 0.005 | 2.71 (0.74–9.91) | 0.13 | 4.02 (1.41–11.43) | 0.009 |
| 14.0–19.9 | 53/866 (6%) | Reference | | Reference | | Reference | |
| 20.0–23.9 | 101/1029 (10%) | 1.86 (1.31–2.64) | 0.001 | 1.78 (1.20–2.65) | 0.004 | 1.85 (1.30–2.65) | <0.001 |
| 24.0–27.9 | 90/921 (10%) | 1.98 (1.38–2.84) | <0.001 | 2.31 (1.54–3.46) | <0.001 | 2.17 (1.50–3.14) | <0.001 |
| 28.0–36.9 (weeks) | 189/1293 (15%) | 3.79 (2.71–5.31) | <0.001 | 4.80 (3.26–7.06) | <0.001 | 4.51 (3.19–6.38) | <0.001 |
| Age Group | | | | | | | |
| <20 | 210/1334 (16%) | Reference | | Reference | | Reference | |
| 20–25 | 106/1333 (8%) | 0.50 (0.39–0.65) | <0.001 | 0.61 (0.43–0.86) | 0.005 | 0.60 (0.44–0.82) | 0.001 |
| 25–30 | 68/804 (8%) | 0.54 (0.40–0.73) | <0.001 | 0.91 (0.56–1.48) | 0.70 | 0.73 (0.48–1.13) | 0.16 |
| 30–35 | 28/401 (7%) | 0.44 (0.29–0.67) | <0.001 | 0.52 (0.27–0.98) | 0.04 | 0.56 (0.33–0.97) | 0.04 |
| ≥35 (years) | 26/275 (9%) | 0.71 (0.46–1.11) | 0.14 | 0.77 (0.37–1.58) | 0.48 | 0.92 (0.52–1.63) | 0.78 |
| Pregnancy history | | | | | | | |
| G 1 | 210/1449 (14%) | Reference | | Reference | | Reference | |
| G 2 with no loss | 58/706 (8%) | 0.55 (0.41–0.75) | <0.001 | 0.72 (0.48–1.07) | 0.10 | 0.68 (0.48–0.98) | 0.04 |
| G≥3 with no loss | 91/1129 (8%) | 0.54 (0.41–0.70) | <0.001 | 0.60 (0.37–0.96) | 0.03 | 0.66 (0.44–1.00) | 0.048 |
| G 2 with 1 loss | 27/252 (11%) | 0.81 (0.52–1.26) | 0.35 | 1.12 (0.70–1.80) | 0.64 | 0.92 (0.58–1.45) | 0.72 |
| G≥3 with 1 loss | 34/436 (8%) | 0.56 (0.38–0.82) | 0.003 | 0.64 (0.38–1.10) | 0.11 | 0.66 (0.41–1.07) | 0.09 |
| G≥3 with ≥2 losses | 15/138 (11%) | 1.01 (0.57–1.79) | 0.97 | 1.38 (0.67–2.84) | 0.38 | 1.16 (0.61–2.21) | 0.64 |
| Weight (kg) | 437/4146 (11%) | 0.98 (0.97–1.00) | 0.009 | | | | |
| Height (cm) | 399/3670 (11%) | 0.98 (0.97–1.00) | 0.05 | 0.98 (0.96–1.00) | 0.08 | 0.98 (0.96–1.00) | 0.05 |
| BMI (kg/m$^2$) | 399/3670 (11%) | 0.96 (0.92–1.00) | 0.047 | 0.95 (0.91–1.00) | 0.04 | 0.94 (0.9–0.99) | 0.009 |
| HIV infection Yes | 4/31 (13%) | 1.97 (0.65–5.98) | 0.23 | 2.95 (0.54–16.03) | 0.21 | 1.43 (0.43–4.8) | 0.55 |
| No | 376/3476 (11%) | Reference | | Reference | | Reference | |
| Parasitaemia (log$_{10}$/µL) | 438/4147 (11%) | 1.08 (0.95–1.22) | 0.23 | | | | |
| Fever >37.5°C Yes | 35/375 (9%) | 1.08 (0.74–1.57) | 0.70 | | | | |
| No | 393/3734 (11%) | Reference | | | | | |
| Haemoglobin (g/dL) | 435/4123 (11%) | 0.93 (0.86–1.00) | 0.05 | | | | |
| Gametocytaemia Yes | 21/154 (14%) | 1.68 (1.03–2.72) | 0.04 | | | | |
| No | 407/3936 (10%) | Reference | | | | | |
| Mixed Infection Yes | 2/29 (7%) | 1.09 (0.25–4.71) | 0.91 | | | | |
| No | 436/4118 (11%) | Reference | | | | | |
| Malaria transmission | | | | | | | |
| Low | 72/929 (8%) | 0.81 (0.47–1.41) | 0.46 | | | | |
| Moderate | 265/2247 (12%) | Reference | | | | | |
| High | 101/971 (10%) | 0.92 (0.49–1.71) | 0.79 | | | | |

Intraclass correlation: 0.09. AAP: artesunate with atovaquone-proguanil, AL: artemether-lumefantrine, aOR: adjusted odds ratio, AS: artesunate monotherapy, ASAQ: artesunate-amodiaquine, ASMQ: artesunate-mefloquine, ASSP: artesunate-sulfadoxine-pyrimethamine, BMI: body mass index, CI: confidence interval, DP: dihydroartemisinin-piperaquine, EGA: estimated gestational age, G: gravidity, HIV: human immunodeficiency virus, OR: odds ratio, Q: quinine monotherapy, QC: quinine with clindamycin.

Additional Table 3-2. Univariable and multivariable logistic regression on the risk of small-for-gestational-age assuming day 6 on the week

| Baseline characteristic | Proportion (%) | Univariable | | Multivariable (Complete case) | | Multivariable (MI) | |
|---|---|---|---|---|---|---|---|
| | | OR (95% CI) | p-value | aOR (95% CI) | p-value | aOR (95% CI) | p-value |
| Treatment | | | | | | | |
| AL | 307/969 (32%) | Reference | | Reference | | Reference | |
| AAP | 25/55 (45%) | 1.61 (0.78–3.29) | 0.20 | 0.52 (0.14–1.92) | 0.33 | 1.43 (0.60–3.39) | 0.42 |
| AS | 56/154 (36%) | 1.22 (0.75–1.98) | 0.42 | 1.20 (0.68–2.14) | 0.53 | 1.16 (0.68–1.98) | 0.58 |
| ASAQ | 253/695 (36%) | 1.24 (0.99–1.56) | 0.06 | 1.13 (0.86–1.49) | 0.39 | 1.28 (1.01–1.62) | 0.045 |
| ASMQ | 337/810 (42%) | 1.11 (0.89–1.39) | 0.35 | 1.09 (0.84–1.42) | 0.51 | 1.10 (0.87–1.38) | 0.44 |
| ASSP | 67/128 (52%) | 1.51 (0.92–2.49) | 0.10 | 1.77 (0.98–3.22) | 0.06 | 1.39 (0.81–2.39) | 0.23 |
| DP | 230/703 (33%) | 0.98 (0.77–1.23) | 0.84 | 0.98 (0.76–1.27) | 0.87 | 0.97 (0.76–1.24) | 0.83 |
| Q | 20/119 (17%) | 0.50 (0.27–0.89) | 0.02 | 0.16 (0.04–0.65) | 0.01 | 0.56 (0.28–1.12) | 0.10 |
| QC | 15/41 (37%) | 1.09 (0.46–2.58) | 0.84 | No data | | 0.89 (0.33–2.46) | 0.83 |
| EGA at malaria episode | | | | | | | |
| 4.0–13.9 | 10/31 (32%) | 0.66 (0.29–1.49) | 0.32 | 0.65 (0.26–1.60) | 0.35 | 0.59 (0.25–1.36) | 0.21 |
| 14.0–19.9 | 288/758 (38%) | Reference | | Reference | | Reference | |
| 20.0–23.9 | 334/911 (37%) | 0.84 (0.68–1.03) | 0.10 | 0.84 (0.66–1.07) | 0.16 | 0.84 (0.68–1.04) | 0.11 |
| 24.0–27.9 | 295/816 (36%) | 0.75 (0.61–0.94) | 0.01 | 0.80 (0.62–1.04) | 0.09 | 0.81 (0.65–1.02) | 0.07 |
| 28.0–36.9 | 367/1119 (33%) | 0.58 (0.47–0.72) | <0.001 | 0.64 (0.50–0.82) | <0.001 | 0.67 (0.54–0.83) | <0.001 |
| ≥37.0 (weeks) | 16/39 (41%) | 1.03 (0.51–2.05) | 0.94 | 0.47 (0.12–1.81) | 0.27 | 1.28 (0.62–2.64) | 0.51 |
| Age Group | | | | | | | |
| <20 | 494/1199 (41%) | Reference | | | | | |
| 20–25 | 431/1175 (37%) | 0.69 (0.58–0.83) | <0.001 | | | | |
| 25–30 | 210/710 (30%) | 0.50 (0.40–0.61) | <0.001 | | | | |
| 30–35 | 96/348 (28%) | 0.45 (0.34–0.59) | <0.001 | | | | |
| ≥35 (years) | 79/242 (33%) | 0.56 (0.41–0.76) | <0.001 | | | | |
| Pregnancy history | | | | | | | |
| G 1 | 577/1312 (44%) | Reference | | Reference | | Reference | |
| G 2 with no loss | 192/606 (32%) | 0.54 (0.44–0.66) | <0.001 | 0.59 (0.46–0.75) | <0.001 | 0.57 (0.46–0.70) | <0.001 |
| G≥3 with no loss | 257/998 (26%) | 0.40 (0.33–0.48) | <0.001 | 0.47 (0.37–0.59) | <0.001 | 0.47 (0.38–0.57) | <0.001 |
| G 2 with 1 loss | 99/225 (44%) | 0.80 (0.59–1.07) | 0.13 | 0.72 (0.51–1.01) | 0.06 | 0.79 (0.59–1.08) | 0.14 |
| G≥3 with 1 loss | 116/379 (31%) | 0.46 (0.36–0.59) | <0.001 | 0.52 (0.39–0.71) | <0.001 | 0.54 (0.41–0.70) | <0.001 |
| G≥3 with ≥2 losses | 50/117 (43%) | 0.77 (0.52–1.14) | 0.19 | 0.77 (0.47–1.25) | 0.29 | 0.81 (0.54–1.22) | 0.31 |
| Weight (kg) | 1310/3674 (36%) | 0.95 (0.94–0.96) | <0.001 | | | | |
| Height (cm) | 1193/3315 (36%) | 0.96 (0.94–0.97) | <0.001 | 0.95 (0.94–0.97) | <0.001 | 0.95 (0.94–0.96) | <0.001 |
| BMI (kg/m$^2$) | 1193/3315 (36%) | 0.92 (0.90–0.95) | <0.001 | 0.92 (0.89–0.95) | <0.001 | 0.92 (0.90–0.95) | <0.001 |
| HIV infection Yes | 7/24 (29%) | 0.82 (0.32–2.08) | 0.68 | 2.26 (0.55–9.23) | 0.26 | 1.11 (0.47–2.62) | 0.82 |
| No | 225/568 (40%) | Reference | | Reference | | Reference | |
| Parasitaemia (log$_{10}$/μL) | 1310/3674 (36%) | 1.24 (1.13–1.35) | <0.001 | 1.16 (1.04–1.30) | 0.007 | 1.13 (1.03–1.24) | 0.01 |
| Fever >37.5°C Yes | 124/324 (38%) | 1.03 (0.81–1.33) | 0.80 | | | | |
| No | 1178/3322 (35%) | Reference | | | | | |
| Haemoglobin (g/dL) | 1306/3657 (36%) | 0.88 (0.83–0.92) | <0.001 | | | | |
| Gametocytaemia Yes | 45/133 (34%) | 0.91 (0.62–1.32) | 0.61 | | | | |
| No | 1246/3490 (36%) | Reference | | | | | |
| Mixed Infection Yes | 14/25 (56%) | 2.98 (1.30–6.80) | 0.01 | 1.43 (0.49–4.20) | 0.51 | 2.47 (1.05–5.82) | 0.04 |
| No | 1296/3649 (36%) | Reference | | Reference | | Reference | |
| Malaria transmission | | | | | | | |
| Low | 277/726 (38%) | 0.90 (0.59–1.37) | 0.61 | | | | |
| Moderate | 680/2018 (34%) | Reference | | | | | |
| High | 353/930 (38%) | 0.82 (0.54–1.25) | 0.36 | | | | |

Intraclass correlation: 0.06. AAP: artesunate with atovaquone-proguanil, AL: artemether-lumefantrine, aOR: adjusted odds ratio, AS: artesunate monotherapy, ASAQ: artesunate-amodiaquine, ASMQ: artesunate-mefloquine, ASSP: artesunate-sulfadoxine-pyrimethamine, BMI: body mass index, CI: confidence interval, DP: dihydroartemisinin-piperaquine, EGA: estimated gestational age, G: gravidity, HIV: human immunodeficiency virus, OR: odds ratio, Q: quinine monotherapy, QC: quinine with clindamycin.

One reviewer requested to run anlyses stratified by geographical region. We have conducted requested analyses for moderate-to-late PTB, SGA and placental malaria, which have enough number of events. In Asia, there are only one or two study sites included, so interpretation needs caution. Same imputed dataset was used for each outcome (except placental malaria which multiple imputation was not needed).

Additional Table 3-3. Multivariable logistic regression on the risk of moderate-to-late preterm birth stratified by geographical region using multiple imputation

| Baseline characteristic | Proportion (%) | Multivariable (All) | | Multivariable (Africa) | | Multivariable (Asia) | |
|---|---|---|---|---|---|---|---|
| | | aOR (95% CI) | p-value | aOR (95% CI) | p-value | aOR (95% CI) | p-value |
| Treatment | | | | | | | |
| AL | 156/1035 (15%) | Reference | | Reference | | Reference | |
| AAP | 4/76 (5%) | 0.69 (0.19–2.44) | 0.56 | No data | | 1.88 (0.40-8.82) | 0.43 |
| AS | 15/174 (9%) | 1.49 (0.64–3.50) | 0.36 | No data | | 3.00 (0.83-10.82) | 0.09 |
| ASAQ | 124/747 (17%) | 1.05 (0.79–1.39) | 0.75 | 1.03 (0.78-1.38) | 0.82 | No data | |
| ASMQ | 128/926 (14%) | 1.07 (0.80–1.41) | 0.65 | 1.01 (0.75-1.35) | 0.97 | 4.60 (1.26-16.77) | 0.02 |
| ASSP | 22/147 (15%) | 1.83 (0.88–3.81) | 0.10 | 4.90 (1.23-19.48) | 0.02 | 4.02 (1.05-15.38) | 0.04 |
| DP | 151/804 (19%) | 1.22 (0.93–1.60) | 0.15 | 1.23 (0.93-1.62) | 0.15 | 1.23 (0.19-7.88) | 0.83 |
| Q | 15/171 (9%) | 1.67 (0.79–3.54) | 0.18 | 1.74 (0.56-5.44) | 0.34 | 5.85 (1.46-23.53) | 0.01 |
| QC | 4/51 (8%) | 1.39 (0.34–5.67) | 0.65 | No data | | 2.97 (0.62-14.21) | 0.17 |
| EGA at malaria episode | | | | | | | |
| 4.0–13.9 | 5/38 (13%) | 3.92 (1.38–11.13) | 0.01 | 3.75 (0.34-40.99) | 0.28 | 2.89 (0.81-10.30) | 0.10 |
| 14.0–19.9 | 78/863 (9%) | Reference | | Reference | | Reference | |
| 20.0–23.9 | 136/1023 (13%) | 1.71 (1.25–2.32) | <0.001 | 1.84 (1.33-2.56) | <0.001 | 1.04 (0.42-2.57) | 0.94 |
| 24.0–27.9 | 142/917 (15%) | 2.37 (1.74–3.23) | <0.001 | 2.53 (1.81-3.53) | <0.001 | 1.78 (0.75-4.24) | 0.19 |
| 28.0–36.9 (weeks) | 258/1290 (20%) | 4.33 (3.21–5.84) | <0.001 | 5.00 (3.61-6.92) | <0.001 | 1.86 (0.86-4.04) | 0.11 |
| Age Group | | | | | | | |
| <20 | 284/1323 (21%) | Reference | | Reference | | Reference | |
| 20–25 | 154/1330 (12%) | 0.67 (0.51–0.87) | 0.003 | 0.68 (0.51-0.91) | 0.01 | 0.57 (0.26-1.23) | 0.15 |
| 25–30 | 100/803 (12%) | 0.82 (0.56–1.18) | 0.29 | 0.93 (0.62-1.40) | 0.73 | 0.50 (0.19-1.33) | 0.16 |
| 30–35 | 46/401 (11%) | 0.72 (0.45–1.12) | 0.15 | 0.79 (0.48-1.31) | 0.37 | 0.45 (0.15-1.38) | 0.16 |
| ≥35 (years) | 35/274 (13%) | 0.99 (0.60–1.64) | 0.98 | 1.28 (0.74-2.24) | 0.38 | 0.40 (0.12-1.37) | 0.14 |
| Pregnancy history | | | | | | | |
| G 1 | 284/1439 (20%) | Reference | | Reference | | Reference | |
| G 2 with no loss | 81/704 (12%) | 0.65 (0.48–0.89) | 0.007 | 0.64 (0.46-0.90) | 0.01 | 0.63 (0.26-1.51) | 0.30 |
| G≥3 with no loss | 141/1128 (12%) | 0.67 (0.47–0.96) | 0.03 | 0.57 (0.39-0.85) | 0.01 | 1.48 (0.63-3.50) | 0.37 |
| G 2 with 1 loss | 41/251 (16%) | 0.95 (0.65–1.40) | 0.81 | 0.96 (0.64-1.45) | 0.86 | 0.90 (0.25-3.27) | 0.87 |
| G≥3 with 1 loss | 51/435 (12%) | 0.66 (0.44–0.99) | 0.046 | 0.62 (0.40-0.97) | 0.03 | 0.74 (0.24-2.25) | 0.59 |
| G≥3 with ≥2 losses | 18/137 (13%) | 1.00 (0.56–1.79) | 1.00 | 0.62 (0.29-1.36) | 0.24 | 2.79 (1.04-7.47) | 0.04 |
| Weight (kg) | 618/4130 (15%) | | | | | | |
| Height (cm) | 579/3655 (16%) | 0.98 (0.96–0.99) | 0.01 | 0.98 (0.96-1.00) | 0.02 | 0.98 (0.93-1.04) | 0.52 |
| BMI (kg/m$^2$) | 579/3655 (16%) | 0.94 (0.90–0.97) | <0.001 | 0.94 (0.90-0.98) | 0.002 | 0.94 (0.84-1.06) | 0.32 |
| HIV infection Yes | 4/31 (13%) | 1.22 (0.36–4.09) | 0.75 | 1.10 (0.37-3.24) | 0.87 | No data | |
| No | 527/3462 (15%) | Reference | | Reference | | | |
| Parasitaemia (log$_{10}$/µL) | 619/4131 (15%) | | | | | | |
| Fever >37.5°C Yes | 45/375 (12%) | | | | | | |
| No | 563/3719 (15%) | | | | | | |
| Haemoglobin (g/dL) | 616/4107 (15%) | | | | | | |
| Gametocytaemia Yes | 24/153 (16%) | | | | | | |
| No | 584/3922 (15%) | | | | | | |
| Mixed Infection Yes | 2/29 (7%) | | | | | | |
| No | 617/4102 (15%) | | | | | | |
| Malaria transmission | | | | | | | |
| Low | 72/929 (8%) | 0.42 (0.22–0.81) | 0.009 | 0.84 (0.26-2.69) | 0.77 | | |
| Moderate | 397/2236 (18%) | Reference | | Reference | | No data | |
| High | 150/966 (16%) | 0.86 (0.47–1.58) | 0.63 | 0.69 (0.34-1.42) | 0.31 | No data | |

AAP: artesunate with atovaquone-proguanil, AL: artemether-lumefantrine, aOR: adjusted odds ratio, AS: artesunate monotherapy, ASAQ: artesunate-amodiaquine, ASMQ: artesunate-mefloquine, ASSP: artesunate-sulfadoxine-pyrimethamine, BMI: body mass index, CI: confidence interval, DP: dihydroartemisinin-piperaquine, EGA: estimated gestational age, G: gravidity, HIV: human immunodeficiency virus, MI: multiple imputation, OR: odds ratio, Q: quinine monotherapy, QC: quinine with clindamycin.

Additional Table 3-4. Multivariable logistic regression on the risk of small-for-gestational-age stratified by geographical region using multiple imputation

| Baseline characteristic | Proportion (%) | Multivariable (All) | | Multivariable (Africa) | | Multivariable (Asia) | |
|---|---|---|---|---|---|---|---|
| | | aOR (95% CI) | p-value | aOR (95% CI) | p-value | aOR (95% CI) | p-value |
| Treatment | | | | | | | |
| AL | 241/973 (25%) | Reference | | Reference | | Reference | |
| AAP | 25/55 (45%) | 1.85 (0.72–4.75) | 0.20 | No data | | 2.19 (1.05-4.53) | 0.04 |
| AS | 56/154 (36%) | 1.26 (0.74–2.16) | 0.40 | No data | | 1.41 (0.80-2.50) | 0.24 |
| ASAQ | 164/700 (23%) | 1.05 (0.80–1.37) | 0.73 | 1.04 (0.79-1.36) | 0.79 | No data | |
| ASMQ | 257/820 (31%) | 1.00 (0.78–1.28) | 0.99 | 1.01 (0.78-1.31) | 0.92 | 2.00 (1.10-3.67) | 0.02 |
| ASSP | 66/129 (51%) | 1.37 (0.79–2.36) | 0.27 | 0.29 (0.07-1.19) | 0.09 | 3.21 (1.71-6.02) | <0.001 |
| DP | 163/716 (23%) | 0.87 (0.67–1.14) | 0.31 | 0.86 (0.65-1.13) | 0.27 | 1.99 (0.84-4.70) | 0.12 |
| Q | 20/119 (17%) | 0.69 (0.32–1.52) | 0.36 | 0.67 (0.27-1.68) | 0.39 | 0.85 (0.35-2.07) | 0.72 |
| QC | 15/41 (37%) | 1.11 (0.37- 3.35) | 0.86 | No data | | 1.37 (0.61-3.08) | 0.44 |
| EGA at malaria episode | | | | | | | |
| 4.0–13.9 | 10/31 (32%) | 0.62 (0.27–1.45) | 0.27 | 0.14 (0.01-2.70) | 0.19 | 0.82 (0.32-2.09) | 0.68 |
| 14.0–19.9 | 227/765 (30%) | Reference | | Reference | | Reference | |
| 20.0–23.9 | 246/914 (27%) | 0.80 (0.63–1.00) | 0.05 | 0.77 (0.60-1.00) | 0.05 | 0.85 (0.50-1.43) | 0.54 |
| 24.0–27.9 | 219/820 (27%) | 0.80 (0.63–1.01) | 0.07 | 0.77 (0.59-1.00) | 0.05 | 0.88 (0.51-1.53) | 0.65 |
| 28.0–36.9 | 289/1138 (25%) | 0.70 (0.55–0.87) | 0.002 | 0.58 (0.45-0.76) | <0.001 | 1.21 (0.76-1.95) | 0.42 |
| ≥37.0 (weeks) | 16/39 (41%) | 1.36 (0.66–2.84) | 0.41 | 0.29 (0.05-1.83) | 0.19 | 2.81 (1.13-6.99) | 0.03 |
| Age Group | | | | | | | |
| <20 | 379/1202 (32%) | | | | | | |
| 20–25 | 332/1185 (28%) | | | | | | |
| 25–30 | 170/717 (24%) | | | | | | |
| 30–35 | 63/357 (18%) | | | | | | |
| ≥35 (years) | 63/246 (26%) | | | | | | |
| Pregnancy history | | | | | | | |
| G 1 | 444/1316 (34%) | Reference | | Reference | | Reference | |
| G 2 with no loss | 154/614 (25%) | 0.62 (0.49–0.78) | <0.001 | 0.55 (0.42-0.72) | <0.001 | 0.87 (0.54-1.39) | 0.55 |
| G≥3 with no loss | 186/1011 (18%) | 0.48 (0.39–0.60) | <0.001 | 0.46 (0.36-0.58) | <0.001 | 0.57 (0.36-0.90) | 0.02 |
| G 2 with 1 loss | 76/225 (34%) | 0.82 (0.59–1.12) | 0.21 | 0.80 (0.56-1.13) | 0.20 | 0.94 (0.40-2.21) | 0.89 |
| G≥3 with 1 loss | 88/387 (23%) | 0.54 (0.41–0.72) | <0.001 | 0.52 (0.37-0.72) | <0.001 | 0.67 (0.38-1.18) | 0.16 |
| G≥3 with ≥2 losses | 40/117 (34%) | 0.79 (0.51–1.21) | 0.27 | 0.73 (0.42-1.29) | 0.28 | 0.83 (0.41-1.67) | 0.61 |
| Weight (kg) | 1007/3707 (27%) | | | | | | |
| Height (cm) | 891/3347 (27%) | 0.95 (0.93–0.96) | <0.001 | 0.94 (0.93-0.96) | <0.001 | 0.96 (0.93-0.99) | 0.01 |
| BMI (kg/m$^2$) | 891/3347 (27%) | 0.92 (0.89–0.95) | <0.001 | 0.92 (0.89-0.96) | <0.001 | 0.92 (0.86-0.99) | 0.03 |
| HIV infection Yes | 6/24 (25%) | 1.04 (0.43–2.55) | 0.92 | 1.22 (0.45-3.26) | 0.69 | No data | |
| No | 849/3105 (27%) | Reference | | Reference | | | |
| Parasitaemia (log$_{10}$/µL) | 1007/3707 (27%) | 1.14 (1.03–1.26) | 0.009 | 1.14 (1.01-1.29) | 0.03 | 1.10 (0.93-1.31) | 0.27 |
| Fever >37.5°C Yes | 112/325 (34%) | | | | | | |
| No | 888/3352 (26%) | | | | | | |
| Haemoglobin (g/dL) | 1003/3690 (27%) | | | | | | |
| Gametocytaemia Yes | 36/133 (27%) | | | | | | |
| No | 953/3522 (27%) | | | | | | |
| Mixed Infection Yes | 14/25 (56%) | 2.54 (1.07–5.99) | 0.03 | 19.79 (1.55-252.07) | 0.02 | 1.88 (0.73-4.86) | 0.19 |
| No | 993/3682 (27%) | Reference | | | | | |
| Malaria transmission | | | | | | | |
| Low | 277/726 (38%) | | | | | | |
| Moderate | 484/2040 (24%) | | | | | | |
| High | 246/941 (26%) | | | | | | |

AAP: artesunate with atovaquone-proguanil, AL: artemether-lumefantrine, aOR: adjusted odds ratio, AS: artesunate monotherapy, ASAQ: artesunate-amodiaquine, ASMQ: artesunate-mefloquine, ASSP: artesunate-sulfadoxine-pyrimethamine, BMI: body mass index, CI: confidence interval, DP: dihydroartemisinin-piperaquine, EGA: estimated gestational age, G: gravidity, HIV: human immunodeficiency virus, MI: multiple imputation, OR: odds ratio, Q: quinine monotherapy, QC: quinine with clindamycin.

Additional Table 3-5. Multivariable logistic regression on the risk of malaria pigment deposition stratified by geographical region

| Baseline characteristic | Proportion (%) | Multivariable (All) | | Multivariable (Africa) | | Multivariable (Asia) | |
|---|---|---|---|---|---|---|---|
| | | aOR (95% CI) | p-value | aOR (95% CI) | p-value | aOR (95% CI) | p-value |
| Treatment | | | | | | | |
| AL | 733/880 (83%) | Reference | | Reference | | Reference | |
| AS | 56/84 (67%) | 1.77 (0.85–3.68) | 0.13 | No data | | 1.91 (0.91-4.00) | 0.09 |
| ASAQ | 544/645 (84%) | 0.90 (0.63–1.28) | 0.55 | 0.90 (0.63-1.28) | 0.57 | No data | |
| ASMQ | 560/658 (85%) | 0.78 (0.54–1.13) | 0.20 | 0.80 (0.55-1.15) | 0.23 | No data | |
| DP | 559/642 (87%) | 0.91 (0.62–1.34) | 0.64 | 0.91 (0.62-1.34) | 0.64 | No data | |
| Q | 53/78 (68%) | 0.80 (0.38–1.66) | 0.55 | 0.73 (0.35-1.55) | 0.42 | No data | |
| Interval from malaria to delivery (week) | 2505/2987 (84%) | 0.97 (0.95–0.99) | 0.002 | 0.98 (0.96-1.00) | 0.01 | 0.96 (0.91-1.01) | 0.09 |
| Age (year) | 2505/2987 (84%) | 0.93 (0.91–0.95) | <0.001 | 0.91 (0.89-0.94) | <0.001 | 1.03 (0.97-1.10) | 0.35 |
| Parity | | | | | | | |
| 0 | 1199/1292 (93%) | Reference | | Reference | | Reference | |
| 1 | 498/580 (86%) | 0.82 (0.58–1.17) | 0.27 | 0.81 (0.56-1.18) | 0.27 | 0.94 (0.30-2.94) | 0.92 |
| ≥2 | 807/1112 (73%) | 0.59 (0.41–0.86) | 0.006 | 0.65 (0.44-0.96) | 0.03 | 0.43 (0.13-1.43) | 0.17 |
| Weight (kg) | 2505/2987 (84%) | | | | | | |
| Height (cm) | 2383/2806 (85%) | | | | | | |
| BMI (kg/m$^2$) | 2383/2806 (85%) | | | | | | |
| HIV infection Yes | 18/24 (75%) | | | | | | |
| No | 2035/2414 (84%) | | | | | | |
| Parasitaemia ($log_{10}$/μL) | 2505/2987 (84%) | 1.67 (1.42–1.96) | <0.001 | 1.54 (1.30-1.83) | <0.001 | 2.39 (1.51-3.77) | <0.001 |
| Body temperature (°C) | 2504/2986 (84%) | 1.22 (1.00–1.49) | 0.045 | 1.13 (0.90-1.42) | 0.28 | 1.28 (0.84-1.94) | 0.25 |
| Haemoglobin (g/dL) | 2500/2978 (84%) | 0.72 (0.65–0.78) | <0.001 | 0.70 (0.63-0.77) | <0.001 | 0.81 (0.62-1.05) | 0.12 |
| Gametocytaemia Yes | 84/91 (92%) | 3.62 (1.58–8.26) | 0.002 | 4.31 (1.50-12.36) | 0.01 | 3.43 (0.77-15.40) | 0.11 |
| No | 2417/2891 (84%) | Reference | | Reference | | Reference | |
| Mixed Infection Yes | 12/16 (75%) | | | | | | |
| No | 2493/2971 (84%) | | | | | | |
| Malaria transmission | | | | | | | |
| Low | 159/249 (64%) | 0.81 (0.34–1.91) | 0.63 | 1.20 (0.55-2.58) | 0.65 | | |
| Moderate | 1588/1838 (86%) | Reference | | Reference | | | |
| High | 758/900 (84%) | 1.16 (0.63–2.13) | 0.64 | 1.17 (0.67-2.06) | 0.58 | | |

AL: artemether-lumefantrine, aOR: adjusted odds ratio, AS: artesunate monotherapy, ASAQ: artesunate-amodiaquine, ASMQ: artesunate-mefloquine, BMI: body mass index, CI: confidence interval, DP: dihydroartemisinin-piperaquine, EGA: estimated gestational age, G: gravidity, HIV: human immunodeficiency virus, OR: odds ratio, Q: quinine monotherapy.