**Additional file 2:**

**Pharmacokinetic parameters (median, IQR) of amodiaquine and desethylamodiaquine following artesunate-amodiaquine fixed-dose combination treatment of Ghanaian patients with uncomplicated *P.* *falciparum* malaria, by study site and age category**

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|  | **Navrongo Health Research Centre** |
| **All ages** | **< 1 year** | **1 to 4 years** | **≥ 5 years** | **P-value** |
| **Amodiaquine** | *n=198* | *n=6* | *n=112* | *n=80* |  |
| AUC0-∞ (ng•h /ml) | 1,090 (517 – 2,735) | 3,162 (2296 - 4201) | 1,556 (615 – 3,983) | 803 (369 – 1,396) | <0.001 |
| Cmax (ng/ml)  | 17.4 (9.0 - 37.2) | 29.5 (19.8 - 49.6) | 25.4 (12.7 - 51.7) | 10.2 (6.4 - 17.8) | <0.001 |
| Tmax (days)  | 2(1 - 3) | 1.5(1 - 3) | 2(1 – 3) | 2(1 - 3) | 0.76 |
| Cl/F (L.kg-1.h-1)  | 27.9 (12.2 - 61.9) | 9.7 (6.7 - 12.2) | 22.5 (8.4 - 48.1) | 41.3 (26.1 - 88.8) | <0.001 |
| Vd/F( L. kg-1)  | 1,401.7 (544.6 – 3,572.5) | 769.7 (325.4 – 4,872.3) | 1,089.1 (460.8 – 2,685.2) | 2,001.1 (1,232.6 – 4,018.6) | 0.022 |
| t½ (hours)  | 46.5 (32.1 - 67.2) | 42.5 (23.0 - 601.6) | 48.0 (32.4 - 78.1) | 43.5 (32.0 - 55.2) | 0.38 |
| **Desethylamodiaquine** | *n=202* | *n=6* | *n=114* | *n=82* |   |
| AUC0-∞ (ng•h /ml)  | 116,426 (70,325 – 209,674) | 163,020 (96,190 – 209,674) | 125,919 (80,162 – 225,806) | 106,163.2 (56026.8 - 163486.2) | 0.065 |
| Cmax (ng/ml)  | 587 (365 - 891) | 423 (266 - 917) | 609 (391 – 1,022) | 539 (260 - 807) | 0.064 |
| Tmax (days)  | 3(2 - 3) | 3(2 - 3) | 3(2 - 3) | 3(2 – 3) | 0.69 |
| Cl/F(L.kg-1.h-1)  | 0.26 (0.16 - 0.48) | 0.19 (0.11 - 0.26) | 0.24 (0.16 - 0.41) | 0.32 (0.18 - 0.61) | 0.038 |
| Vd/F ( L. kg-1)  | 67.0 (430 - 133.2) | 57.0 (51.5 - 90.3) | 60.8 (42.3 - 124.6) | 73.7 (45.8 - 154.2) | 0.31 |
| t½ (days)  | 190.6 (140.1 - 277.8) | 237.8 (206.6 - 257.4) | 186.9 (152.8 - 276.1) | 191.2 (131.3 - 279.3) | 0.77 |

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|  | **Kimtampo Health Research Centre** |
| **All ages** | **< 1 year** | **1 to 4 years** | **≥ 5 years** | **P-value** |
| **Amodiaquine** | *n=25* | *n=3* | *n=13* | *n=9* |  |
| AUC0-∞ (ng•h /ml) | 5,666 (2297 – 17,909) | 42,010 (17,909 – 66,111) | 7,523 (4,788 – 35,009) | 2,172 (1,313 – 4,554) | 0.016 |
| Cmax (ng/ml)  | 81.0 (50.7 – 220.0) | 196.0 (107.0 – 423.0) | 82.9 (73.5 – 329.0) | 32.5 (15.1 – 60.2) | 0.027 |
| Tmax (days)  | 1(1 - 2) | 1(1 - 2) | 1(1 - 2) | 1(1 – 1) | 0.89 |
| Cl/F (L.kg-1.h-1)  | 4.48 (1.20 - 6.49) | 0.90 (0.38 - 1.41) | 3.38 (0.90 - 5.92) | 5.62 (4.01 - 16.21) | 0.072 |
| Vd/F( L. kg-1)  | 274.6 (102.5 - 858.3) | 89.8 (82.1 - 97.5) | 183.3 (107.5 - 802.9) | 380.3 (326.7 – 1,183.5) | 0.12 |
| t½ (hours)  | 51.1 (38.9 - 99.7) | 98.3 (47.8 - 148.7) | 64.1 (39.4 - 155.6) | 40.6 (34.2 - 81.5) | 0.37 |
| **Desethylamodiaquine** | *n=25* | *n=3* | *n=13* | *n=9* |   |
| AUC0-∞ (ng•h /ml)  | 105,523 (70,058 – 162,154) | 164,948 (74,333 – 255,563) | 107,311 (73,474 – 173,784) | 103,656 (66,642 – 153,326) | 0.60 |
| Cmax (ng/ml)  | 442(266 - 599) | 357 (224 - 665) | 442 (266 - 658) | 489 (297 - 565) | 0.88 |
| Tmax (days)  | 2(2 - 3) | 2(1 - 2) | 2(2 - 3) | 3(2 - 3) | 0.078 |
| Cl/F(L.kg-1.h-1)  | 0.29 (0.13 - 0.38) | 0.22 (0.10 - 0.34) | 0.27 (0.16 - 0.67) | 0.30 (0.13 - 0.33) | 0.56 |
| Vd/F ( L. kg-1)  | 80.6 (40.1 - 112.6) | 70.3 (40.1 - 100.5) | 89.2 (49.5 - 289.1) | 72.2 (39.7 - 86.1) | 0.57 |
| t½ (hours)  | 211.1 (179.8 - 251) | 242.4 (204.6 - 280.3) | 200.9 (178.7 - 251.8) | 213.0 (196.4 – 236.0) | 0.77 |