



**Primaquine clears submicroscopic
Plasmodium falciparum gametocytes that
persist after treatment with
sulphadoxine-pyrimethamine and
artesunate**

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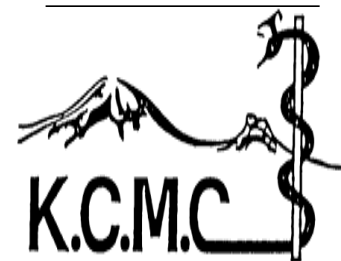
Objectives



1. Determine the efficacy of primaquine in combination with sulphadoxine-pyrimethamine – artesunate (SP+AS+PQ) in clearing submicroscopic gametocytes
2. Assess the safety of PQ in relation to G6PD deficiency



Methods (1)

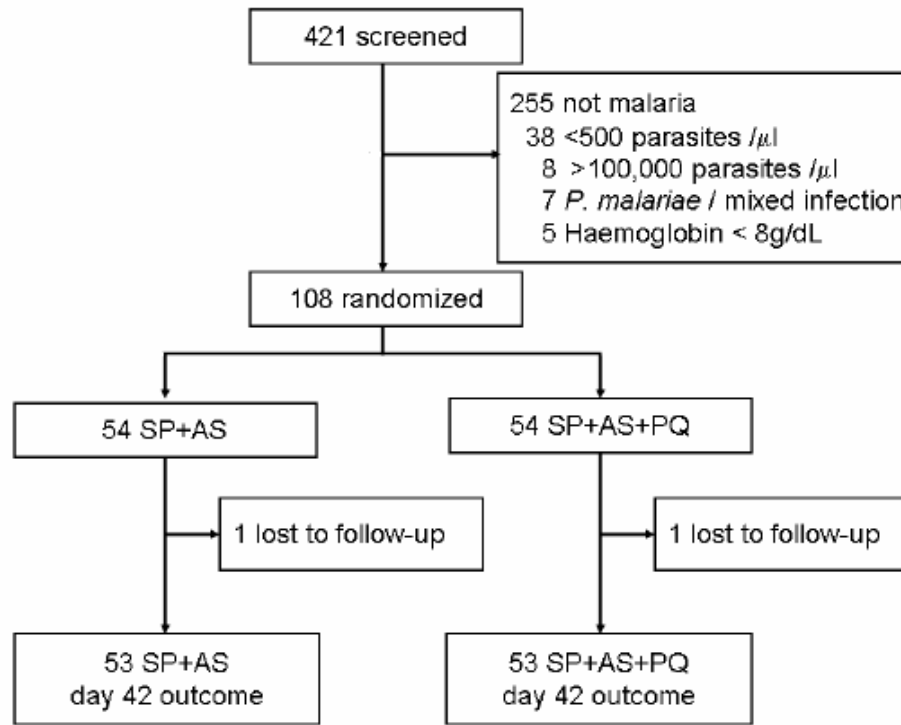


- Study conducted in Mnyuzi, Tanga region (Tanzania)
- An area of high malaria transmission intensity
- Children with uncomplicated malaria and an Hb > 8 g/dL were randomized to SP+AS (n=54) or SP+AS+PQ (n=54)
- Gametocyte detection by molecular *Pfs25* QT-NASBA on d0, d3, d7, d14, d28 and d42 after treatment (d0, d1, d2)
- Hb determined during follow-ups (d3, d7, d14, d28, d42)
- G6PD deficiency determined afterwards by PCR



Methods (2)

Study Profile





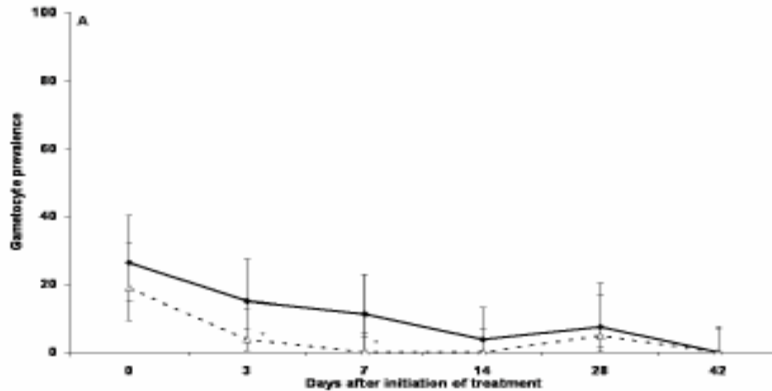
Results (1)



- No side-effects of either treatment reported
- G6PD deficiency in the population:
 - ✓ Homozygote deletion 6.5% (A-, n=7)
 - ✓ Heterozygotes 21.5% (A, n=23)
- High rates of treatment failures and re-infections after day 14:
 - ✓ 28.3% in SP+AS
 - ✓ 32.1% in SP+AS+PQ
- Gametocyte carriage by microscopy at enrolment:
 - ✓ 26% in SP+AS
 - ✓ 19% in SP+AS+PQ

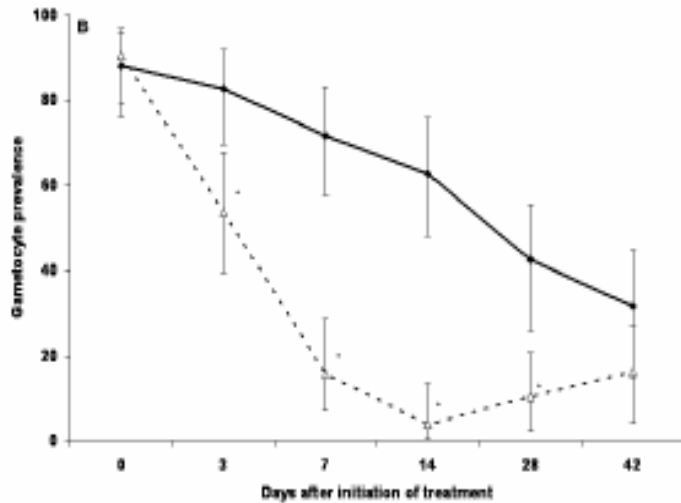


Results (2)



Microscopy:

- PQ -> Significantly lower prevalence
- No carriers seen on day 7 & 14



Molecular (QT- NASBA):

- Carriage rate higher overall
- PQ much reduced



Discussion & Conclusions



- The addition of PQ reduces gametocyte carriage (prevalence and density) significantly but not completely. This effect of reduction is likely to be larger in areas with lower rate of re-infection
- PQ associated with anaemia in G6PD deficient individuals
- The persisted gametocytes are unlikely to infect mosquitoes



Future perspectives



Results are important for our future work:

- We plan to conduct clinical trial on mass drug administration in an area of low transmission intensity, where
 - Most people are asymptomatic with lower parasite densities
 - Less likely to be anaemic
 - With lower G6PD rates