

Evidence Update

Malaria Series

February 2005

Should people with severe malaria being treated with quinine receive a high first dose?

A high first dose of quinine speeds up fever resolution and reduces the time to clear parasites in severe malaria.

Inclusion criteria

Studies:

Randomized and quasi-randomized controlled trials.

Participants:

Adults or children with severe malaria.

Intervention:

Intervention: High first dose of intravenous quinine (20 mg/kg salt, equivalent to 16 mg/kg base).

Control: Standard dose of intravenous quinine (10 mg/kg salt equivalent to 8 mg/kg base).

After the first dose, both groups received standard dose quinine 8 or 12 hourly.

Outcomes:

Primary: Death.

Secondary: Coma recovery time; convulsions; fever clearance time; parasite clearance time; participants with asexual parasitaemia at 24 and 48 hours; any impairment of the nervous system.

Adverse events: Hypoglycaemia; anaemia.

Results

- Four trials included (n=144); one trial was adequately concealed.
- No difference in the number of deaths in those receiving high first dose and standard dose quinine was detected (relative risk 0.62, 95% confidence interval 0.19 to 2.04; 3 trials).
- Parasite clearance (weighted mean difference 7.4 hours, 95% confidence interval 1.6 to 13.2; 2 trials) and fever clearance (weighted mean difference 11.1 hours, 95% confidence interval 2.2 to 20.04; 2 trials) were faster in participants receiving a high first dose of quinine.
- No difference was detected for recovery of consciousness, neurological conditions, or convulsions, but the trials were small.

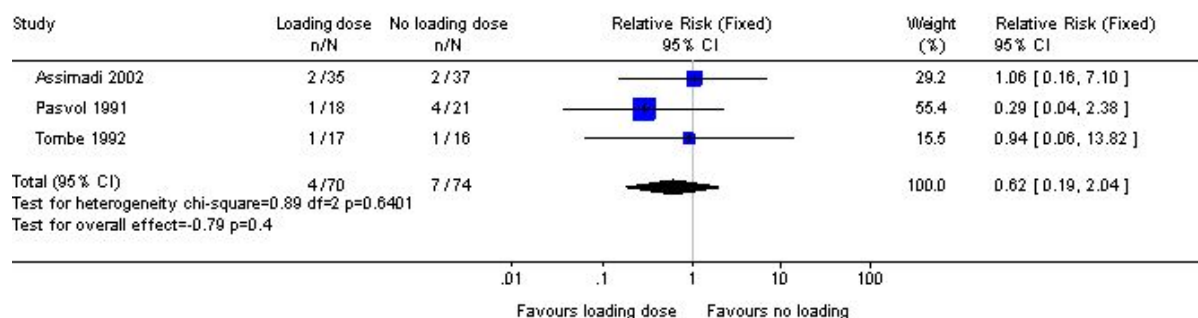


DFID Department for
International
Development

Adapted from Lesi A, Meremikwu M. High first dose quinine regimen for treating severe malaria. *The Cochrane Database of Systematic Reviews* 2004, Issue 3. Art. No.: CD003341. DOI: 10.1002/14651858.CD003341.pub2.

Produced by the Effective Health Care Alliance Programme (www.liv.ac.uk/evidence), Liverpool School of Tropical Medicine, supported by the Department for International Development UK; and the Australasian Cochrane Centre.

Review: High first dose quinine regimen for treating severe malaria
 Comparison: 01 High first (loading) dose compared with no loading dose
 Outcome: 01 Death



Authors' conclusions

Implications for practice:

High first dose quinine reduced fever and parasite clearance time in severe malaria. There are insufficient data to demonstrate an effect on death, convulsions, hypoglycaemia, or coma recovery time.

Implications for research:

Larger, better quality trials evaluating the benefits or harm of quinine loading dose in cerebral malaria are warranted. Researchers conducting trials in severe malaria should use pragmatic outcomes, including death and number of convulsions, as primary outcome measures for benefit, rather than depend on parasite or fever clearance times.