Evidence Update

Malaria Series

Should people with sickle cell disease living in malaria-endemic areas take malaria drug prophylaxis continuously?

Routine malaria drug prophylaxis is beneficial in people with homozygous sickle cell disease living in malaria endemic areas.

Inclusion criteria

Studies:

Randomized and quasi-randomized controlled trials.

Participants:

Adults and children with sickle cell disease living in areas where malaria is common.

Intervention:

Intervention: any antimalarial drug given as prophylaxis for at least three months.

Control: placebo or no intervention.

Outcomes:

Primary: sickle cell crises (severe pain in the bones or abdomen), severe anaemia requiring blood transfusion.

Secondary: malaria infection, hospital admission, and serious adverse events leading to death, hospital admission, or discontinuation of treatment.

Results

- Two trials involving 223 children with homozygous sickle cell disease were included; allocation concealment was adequate in one trial.
- Children receiving proguanil or pyrimethamine over 9 months had fewer painful sickle cell crises (relative risk 0.17, 95% confidence interval 0.04 to 0.83; 1 trial, 97 participants), fewer blood transfusions due to severe anaemia (RR 0.16, 95% CI 0.05 to 0.56; 1 trial, 97 participants), and fewer hospital admissions (RR 0.27, 95% CI 0.12 to 0.63, 1 trial, 97 participants) compared to children receiving placebo.
- Children receiving chloroquine plus benzathine penicillin for 12 months had fewer episodes of malaria during that time (RR 0.16, 95% CI 0.07 to 0.39; 1 trial, 157 participants) than those receiving placebo.
- Adverse events were not reported.

Adapted from Oniyangi O, Omari AAA. Malaria chemoprophylaxis in sickle cell disease. *Cochrane Database of Systematic Reviews* 2006, Issue 4. Art. No.: CD003489. DOI: 10.1002/14651858.CD003489.pub2. *Evidence Update* published in March 2007.

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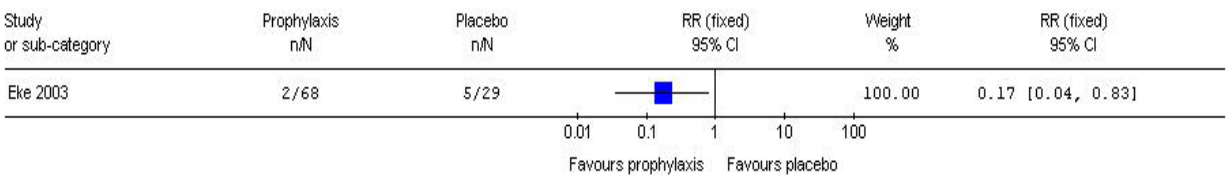
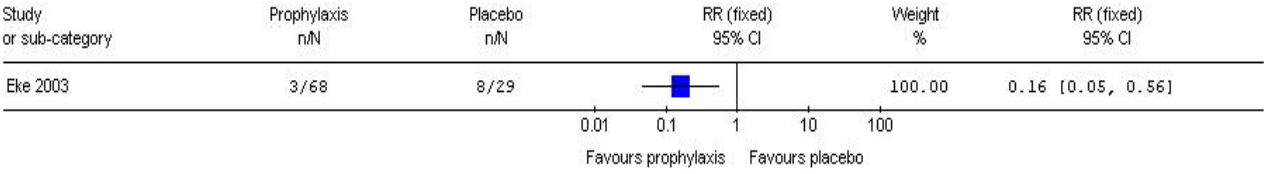
Proguanil or pyrimethamine versus placebo: sickle cell crises



Proguanil or pyrimethamine versus placebo: blood transfusion



Authors' conclusions

Implications for practice:

For children with homozygous sickle cell disease living in malaria-endemic areas malaria drug prophylaxis reduces painful sickle cell crises, anaemia severe enough to require blood transfusion, and hospital admissions.

Implications for research:

Trials are needed to assess the use of malaria prophylaxis for people with other forms of sickle cell disease, and to compare different prophylactic regimens for people with homozygous sickle cell disease.