

Evidence Update

Summary of a Cochrane Review

Child Health Series

Does oral zinc reduce the duration of diarrhoea in children?

In areas where diarrhoea is an important cause of child mortality, oral zinc reduces the duration of acute or persistent diarrhoea in young children over the age of six months.

Background

Diarrhoea is still a major contributor to deaths in young children living in low and middle income countries. It is thought that giving oral zinc supplement may speed recovery from diarrhoea.

Inclusion criteria

Studies:

Randomized controlled trials.

Participants:

Children aged between one month and five years with acute or persistent diarrhoea, including dysentery.

Intervention:

Intervention: at least 5 mg per day oral zinc salt, for any duration.

Control: placebo.

Outcomes:

Primary: duration of diarrhoea.

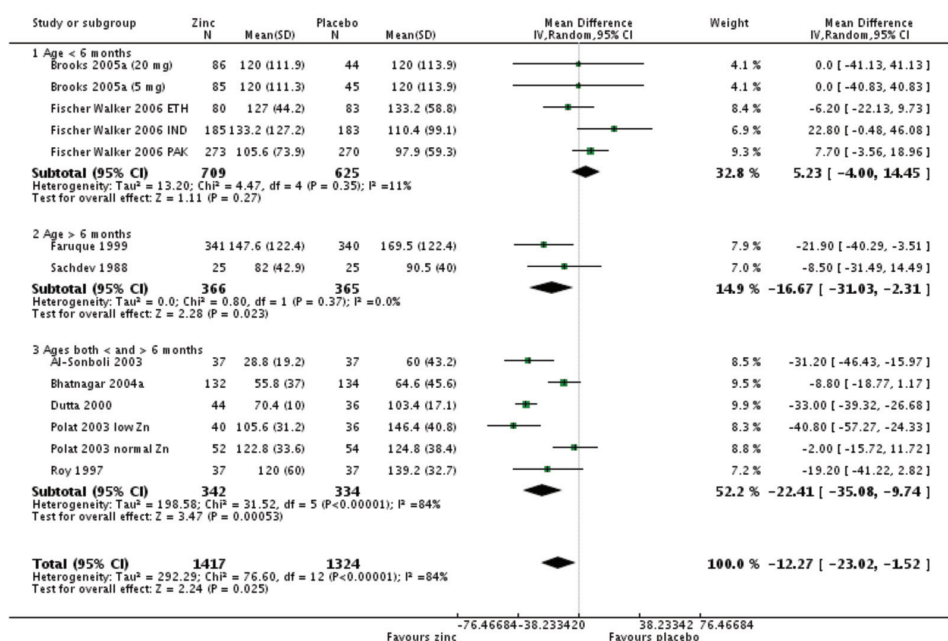
Adverse events: serious adverse events, adverse events requiring discontinuation of treatment, other adverse events.

Results

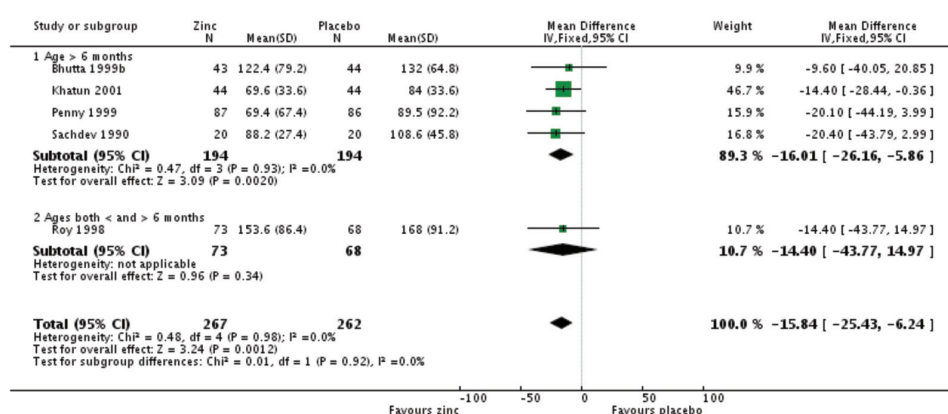
- Eighteen trials involving 6165 children were included; 12 trials had adequate allocation concealment. Fifteen trials were conducted in countries with high risk for zinc deficiency, and three were conducted in countries with medium risk.
- In acute diarrhoea, zinc significantly reduced diarrhoea duration in children aged over six months (mean difference -16.67 hours, 95% confidence interval -31.03 to -2.31 hours; 731 children, 2 trials), but had no benefit in children under six months (1334 children, 2 trials). Zinc also reduced acute diarrhoea at day three (relative risk 0.69, 95% CI 0.59 to 0.81; 1073 children, 2 trials), day five 0.55, 95% CI 0.32 to 0.95; 346 children, 2 trials), and day seven (0.71, 95% CI 0.52 to 0.98; 4087 children, 7 trials), with no benefit in children under six months (1074 children, 1 trial).
- Across all age groups with acute diarrhoea, vomiting was more common in children receiving zinc (risk ratio 1.71, 95% CI 1.27 to 2.30; 4727 children, 8 trials). There were no significant differences between the groups in serum copper levels (2 trials).
- In persistent diarrhoea, zinc significantly reduced diarrhoea duration in children aged over six months (MD -16.01 hours, 95% CI -26.16 to -5.86; 388 children, 4 trials); there were no trials involving children aged under six months.
- In children with persistent diarrhoea, there was no difference between the zinc and placebo groups in incidence of vomiting (505 children, 4 trials).

Adapted from Lazzerini M, Ronfani L. Oral zinc for treating diarrhoea in children. *Cochrane Database of Systematic Reviews* 2008, Issue 3. Art. No.: CD005436. DOI: 10.1002/14651858.CD005436.pub2. Evidence Update published in June 2010.

Zinc vs placebo for acute diarrhoea: diarrhoea duration



Zinc vs placebo for persistent diarrhoea: diarrhoea duration



Authors' conclusions

Implications for practice:

In children aged six months to five years living in areas with a risk of zinc deficiency, oral zinc reduces the duration of acute or persistent diarrhoea. Zinc is associated with an increase in the incidence of vomiting, but this adverse event is outweighed by benefits on diarrhoea.

Implications for research:

No further trials are needed in this area, as zinc has been shown to be of clear benefit.



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