

Objective:

The World Health Organization recommends 20 mg of zinc per day for 10 to 14 days for children with acute diarrhea; in previous trials, this dosage decreased diarrhea but increased vomiting.

Randomised Control trial in India and Tanzania

4500 patients (6–59 mo) randomised to 5 mg, 10mg and 20 mg zinc for 14 days 3 primary outcomes assessed :

- Diarrhea duration of more than 5 days
- Number of stools (assessed in a noninferiority analysis)
- Occurrence of vomiting (assessed in a superiority analysis) within 30 minutes of zinc administration

ACADEMIC P.E.A.R.L.S

Pediatric Evidence And Research Learning Snippet



Should we now use lower dose zinc in acute diarrhea?

Lower-Dose Zinc for Childhood Diarrhea: A Randomized, Multicenter Trial.
Dhingra et al. N Engl J Med 2020;383:1231–41.

Effect of Zinc Supplementation Dose on Diarrhea and Vomiting in Children with Acute Diarrhea.			
Outcome	5-mg Group (N = 1504)	10-mg Group (N = 1498)	20-mg Group (N = 1498)
Diarrhea-related outcomes			
Diarrhea >5 days, intention-to-treat analysis			
No./total no. (%)	106/1480 (7.2)	114/1480 (7.7)	96/1479 (6.5)
One-sided P value for noninferiority	<0.001	0.002	Reference
Total loose or watery stools after enrollment, intention-to-treat analysis			
No. of patients with data	1496	1488	1490
Mean no. of stools	10.8±8.9	10.9±9.2	10.7±8.7
One-sided P value for noninferiority	<0.001	<0.001	
Vomiting-related outcomes			
Any vomiting over 14-day period within 30 min after dosing			
No./total no. (%)	206/1504 (13.7)	233/1498 (15.6)	289/1498 (19.3)
Relative risk (97.5% CI)	0.71 (0.59–0.86)	0.81 (0.67–0.96)	Reference
Two-sided P value for superiority	<0.001	0.01	



All groups had similar outcomes (persistent diarrhea, fever, fast breathing, growth parameters) at :
Day 30, Day 45 & Day 60 of follow up

Conclusion:

- Lower doses of zinc (5 mg, 10mg) had similar diarrheal outcomes as compared to 20mg dose
- Lower doses had lesser vomiting than 20 mg dose

Key Message:

- Statistical analysis should be interpreted carefully
- Low dose zinc may be a promising modification in acute diarrhea therapy in future
- However further trials are required for validation and recommendation at national level

EXPERT COMMENT



“Low dose zinc may be a promising modification in acute diarrhoea therapy in future”

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Reference

Dhingra et al. Lower-Dose Zinc for Childhood Diarrhea — A Randomized, Multicenter Trial. September 24, 2020. N Engl J Med 2020; 383:1231-1241. DOI: 10.1056/NEJMoa1915905