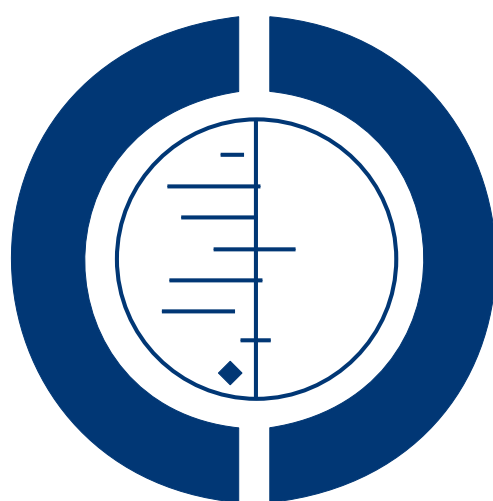


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[Intervention Review]

Vitamin A supplementation for preventing morbidity and mortality in children from 6 months to 5 years of age

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ABSTRACT

Background

Vitamin A deficiency (VAD) is a major public health problem in low and middle income countries affecting 190 million children under 5. VAD can lead to many adverse health consequences, including death.

Objectives

To evaluate the effect of vitamin A supplementation (VAS) for preventing morbidity and mortality in children aged 6 months to 5 years.

Search strategy

We searched the Cochrane Central Register of Controlled Trials (CENTRAL 2010 Issue 2), MEDLINE (1950 to April Week 2 2010), EMBASE (1980 to 2010 Week 16), Global Health (1973 to March 2010), Latin American and Caribbean Health Sciences (LILACS), metaRegister of Controlled Trials and African Index Medicus (27 April 2010).

Selection criteria

Randomised controlled trials (RCTs) and cluster RCTs evaluating the effect of synthetic VAS in children aged 6 months to 5 years living in the community. We excluded studies concerned with children in hospital and children with disease or infection. We excluded studies evaluating the effects of food fortification, consumption of vitamin A rich foods or beta-carotene supplementation.

Data collection and analysis

Two review authors independently assessed studies for inclusion. Data were double abstracted and discrepancies were resolved by discussion. Meta-analyses were performed for outcomes including all-cause and cause-specific mortality, disease, vision, and side-effects.

Main results

43 trials involving 215,633 children were included. A meta-analysis for all-cause mortality included 17 trials comprising 194,795 children with 3536 deaths in both groups. At follow-up, there was a 24% observed reduction in the risk of all-cause mortality for Vitamin A compared with Control (Relative risk (RR) = 0.76 [95% confidence interval (CI) 0.69, 0.83]). Seven trials reported diarrhoea

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mortality and a 28% overall reduction for VAS (RR = 0.72 [0.57, 0.91]). There was no significant effect of VAS on cause specific mortality of measles, respiratory disease and meningitis. VAS reduced incidence of diarrhoea (RR = 0.85 [0.82, 0.87]) and measles morbidity (RR = 0.50 [0.37, 0.67]); however, there was no significant effect on incidence of respiratory disease or hospitalisations due to diarrhoea or pneumonia. There was an increased risk of vomiting within the first 48 hours of VAS (RR = 2.75 [1.81, 4.19]).

Authors' conclusions

VAS is effective in reducing all-cause mortality by about 24% compared to no treatment. In our opinion, given the evidence that VAS causes considerable reduction in child mortality, further placebo-controlled trials of VAS in children between 6 months and 5 years of age are not required. There is a need for further studies comparing different doses and delivery mechanisms (for example, fortification).

PLAIN LANGUAGE SUMMARY

Vitamin A supplementation for preventing disease and death in children six months to five years of age

Vitamin A deficiency (VAD) is a major public health problem in low and middle income countries affecting 190 million children under 5 years of age. VAD pre-disposes children to increased risk of a range of problems that can even lead to death, including respiratory diseases, diarrhoea, measles and vision problems.

This review, including 43 randomised trials representing 215,633 children, shows that giving vitamin A capsules to children aged 6 months to 5 years can reduce death and some diseases. The results of 17 of the studies were summarised and indicate that vitamin A reduces the overall risk of death by 24%. Death due to measles, respiratory infections or meningitis was not specifically reduced, but vitamin A can reduce new occurrences of diarrhoea and measles. When people take very large doses of vitamin A, they may be more likely to vomit within two days after taking it.