

Cochrane Database of Systematic Reviews

Vitamin A supplements for reducing mother-to-child HIV transmission (Review)

Wiysonge CS, Ndze VN, Kongnyuy EJ, Shey MS

Wiysonge CS, Ndze VN, Kongnyuy EJ, Shey MS. Vitamin A supplements for reducing mother-to-child HIV transmission. *Cochrane Database of Systematic Reviews* 2017, Issue 9. Art. No.: CD003648. DOI: 10.1002/14651858.CD003648.pub4.

www.cochranelibrary.com

Vitamin A supplements for reducing mother-to-child HIV transmission (Review) Copyright © 2017 The Authors. Cochrane Database of Systematic Reviews published by John Wiley & Sons, Ltd. on behalf of The Cochrane Collaboration. WILEY



[Intervention Review]

Vitamin A supplements for reducing mother-to-child HIV transmission

Charles S Wiysonge¹, Valantine N Ndze², Eugene J Kongnyuy³, Muki S Shey⁴

¹Cochrane South Africa, South African Medical Research Council, Cape Town, South Africa. ²Centre for Evidence-based Health Care, Faculty of Medicine and Health Sciences, Stellenbosch University, Cape Town, South Africa. ³Reproductive Health Solutions, Salisbury, UK. ⁴Clinical Infectious Diseases Research Initiative (CIDRI), University of Cape Town, Health Sciences Faculty, Cape Town, South Africa

Contact: Charles S Wiysonge, Cochrane South Africa, South African Medical Research Council, Francie van Zijl Drive, Parow Valley, Cape Town, Western Cape, 7505, South Africa. wiysonge@yahoo.com, charles.wiysonge@mrc.ac.za.

Editorial group: Cochrane Infectious Diseases Group. **Publication status and date:** Unchanged, published in Issue 9, 2017.

Citation: Wiysonge CS, Ndze VN, Kongnyuy EJ, Shey MS. Vitamin A supplements for reducing mother-to-child HIV transmission. *Cochrane Database of Systematic Reviews* 2017, Issue 9. Art. No.: CD003648. DOI: 10.1002/14651858.CD003648.pub4.

Copyright © 2017 The Authors. Cochrane Database of Systematic Reviews published by John Wiley & Sons, Ltd. on behalf of The Cochrane Collaboration. This is an open access article under the terms of the Creative Commons Attribution-Non-Commercial Licence, which permits use, distribution and reproduction in any medium, provided the original work is properly cited and is not used for commercial purposes.

ABSTRACT

Background

Strategies to reduce the risk of mother-to-child transmission of the human immunodeficiency virus (HIV) include lifelong antiretroviral therapy (ART) for HIV-positive women, exclusive breastfeeding from birth for six weeks plus nevirapine or replacement feeding plus nevirapine from birth for four to six weeks, elective Caesarean section delivery, and avoiding giving children chewed food. In some settings, these interventions may not be practical, feasible, or affordable. Simple, inexpensive, and effective interventions (that could potentially be implemented even in the absence of prenatal HIV testing programmes) would be valuable. Vitamin A, which plays a role in immune function, is one low-cost intervention that has been suggested in such settings.

Objectives

To summarize the effects of giving vitamin A supplements to HIV-positive women during pregnancy and after delivery.

Search methods

We searched the Cochrane Central Register of Controlled Trials (CENTRAL), PubMed, Embase, and the World Health Organization International Clinical Trials Registry Platform (WHO ICTRP) up to 25 August 2017, and checked the reference lists of relevant articles for eligible studies.

Selection criteria

We included randomized controlled trials conducted in any setting that compared vitamin A supplements to placebo or no intervention among HIV-positive women during pregnancy or after delivery, or both.

Data collection and analysis

At least two review authors independently assessed study eligibility and extracted data. We expressed study results as risk ratios (RR) or mean differences (MD) as appropriate, with their 95% confidence intervals (CI), and conducted random-effects meta-analyses. This is an update of a review last published in 2011.

Main results

Five trials met the inclusion criteria. These were conducted in Malawi, South Africa, Tanzania, and Zimbabwe between 1995 and 2005 and none of the participants received ART. Women allocated to intervention arms received vitamin A supplements at a variety of doses (daily

Vitamin A supplements for reducing mother-to-child HIV transmission (Review)

Copyright © 2017 The Authors. Cochrane Database of Systematic Reviews published by John Wiley & Sons, Ltd. on behalf of The Cochrane Collaboration.



Trusted evidence. Informed decisions. Better health.

during pregnancy; a single dose immediately after delivery, or daily doses during pregnancy plus a single dose after delivery). Women allocated to comparison arms received identical placebo (6601 women, 4 trials) or no intervention (697 women, 1 trial). Four trials (with 6995 women) had low risk of bias and one trial (with 303 women) had high risk of attrition bias.

The trials show that giving vitamin A supplements to HIV-positive women during pregnancy, the immediate postpartum period, or both, probably has little or no effect on mother-to-child transmission of HIV (RR 1.07, 95% CI 0.91 to 1.26; 4428 women, 5 trials, *moderate certainty evidence*) and may have little or no effect on child death by two years of age (RR 1.06, 95% CI 0.92 to 1.22; 3883 women, 3 trials, *low certainty evidence*). However, giving vitamin A supplements during pregnancy may increase the mean birthweight (MD 34.12 g, 95% CI –12.79 to 81.02; 2181 women, 3 trials, *low certainty evidence*) and probably reduces the incidence of low birthweight (RR 0.78, 95% CI 0.63 to 0.97; 1819 women, 3 trials, *moderate certainty evidence*); but we do not know whether vitamin A supplements affect the risk of preterm delivery (1577 women, 2 trials), stillbirth (2335 women, 3 trials), or maternal death (1267 women, 2 trials).

Authors' conclusions

Antepartum or postpartum vitamin A supplementation, or both, probably has little or no effect on mother-to-child transmission of HIV in women living with HIV infection and not on antiretroviral drugs. The intervention has largely been superseded by ART which is widely available and effective in preventing vertical transmission.

2 April 2019

Up to date

All studies incorporated from most recent search

Updated review: all eligible published studies found in the last search (25 Aug, 2017) were included

PLAIN LANGUAGE SUMMARY

Vitamin A supplements for reducing mother-to-child transmission of HIV infection

What is the aim of this review?

The main aim of this Cochrane Review was to assess the effects of giving vitamin A supplements to HIV-positive women, during pregnancy or after delivery, or both, on the risk of mother-to-child transmission of HIV infection. Cochrane researchers collected and examined all relevant studies to answer this question and included five trials. This is an update of a review last published in 2011.

What is the key message of this review?

Giving vitamin A supplements to HIV-positive women, during pregnancy or after delivery, or both, probably makes little or no difference to the risk of mother-to-child transmission of HIV (*moderate certainty evidence*).

What are the main results of the review?

Five trials met the inclusion criteria of the review. Two trials were from South Africa and one trial each from Malawi, Tanzania, and Zimbabwe. The trials compared women receiving vitamin A supplements to women not receiving such supplements. None of the participants received antiretroviral therapy (ART).

The review shows that in women living with HIV infection and not on ART:

- giving vitamin A supplements to HIV-positive women during pregnancy, immediately after delivery, or both, probably has little or no effect on the risk of mother-to-child transmission of HIV (*moderate certainty evidence*) and may have little or no effect on child death by two years of age (*low certainty evidence*);

- giving vitamin A supplements to HIV-positive women during pregnancy may increase the mean birthweight (*low certainty evidence*) and probably reduces the number of low birthweight babies (*moderate certainty evidence*), but it is uncertain whether the intervention has an effect on the number of preterm births, stillbirths, or deaths among the women (*very low certainty evidence*).

The intervention has largely been superseded by ART, which is widely available and effective in preventing mother-to-child transmission of HIV.

How up-to-date is this review?

The review authors searched for studies up to 25 August 2017.

Vitamin A supplements for reducing mother-to-child HIV transmission (Review)

Copyright © 2017 The Authors. Cochrane Database of Systematic Reviews published by John Wiley & Sons, Ltd. on behalf of The Cochrane Collaboration.