

Abstract

Author: Katharina Urban- MD
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Thesis title: Cholera and Vitamin A - Deficiency, supplementation of Vitamin A and the effect on Cholera in children under five years of age
A critical literature review
Key words: Cholera, Vitamin A, Retinol, vaccine, review
Supervisor: PD Dr Dirk Werber, Department for Infectious Disease Epidemiology, Robert Koch Institute, Berlin, Germany

Problem statement/Objectives Cholera is an acute gastrointestinal disease caused by *Vibrio cholerae*. About 1.4 billion people world-wide are at risk and approximately 2.8 million cholera cases occur each year. Children under five years are one of the most vulnerable groups for Cholera. In almost all Cholera endemic areas Vitamin A deficiency is a public health issue. But no specific recommendation on Vitamin A supplementation in Cholera endemic areas has been published to date. This review aims at summarizing the state of knowledge on the potential relationship of Cholera and Vitamin A. Since Vitamin A is often given at immunization contacts the interaction of Vitamin A and vaccines was also addressed.

Methods A critical literature review on the terms 'Cholera, Vitamin A and vaccines' was conducted. Electronic databases (Pub Med, Science Direct, BioMed Central, BIOSIS previews, CINHALL, Cochrane Library, OVID, EMBASE, Web of Science), the online catalogue of the Charité and different websites were searched. Furthermore several researchers were contacted directly.

Results 36 studies were found in total- 6 on Cholera and Vitamin A, 30 on Vitamin A and vaccines. It was found that: Vitamin A deficiency increases the risk of infection and symptomatic disease; Vitamin A supplementation has no effect on severity or duration of Cholera but probably enhances Cholera vaccine efficacy; Vitamin A showed no significant benefit in treatment of Cholera. Findings on Vitamin A given with vaccines were diverse. Most studies found no significant negative effect. Few results suggest a sex-specific increase of mortality.

Discussion/Conclusion Based on the studies found as well as on WHO publications and current reviews Vitamin A supplementation is considered a safe intervention that can be given in the context of immunization programmes. But recent studies suggesting an increase of mortality need to be part of reevaluation.

As all studies on Cholera and Vitamin A were located in either Bangladesh or India, only analyzed subgroups or did not adjust for potential confounders it cannot be recommended to emphasize Vitamin A based on the studies found. Therefore further research tailored to the question if Vitamin A is beneficial in Cholera endemic areas is strongly encouraged given the potential large public health benefit of Vitamin A on Cholera incidence.