Cochrane Database of Systematic Reviews - - Cochrane Review

Vitamin K supplementation for cystic fibrosis

Code: CD008482 **Year:** 2020 **Date:** 2011 - updated: 12 AUG 2019 **Author:** Jagannath Vanitha A

Study design (if review, criteria of inclusion for studies)

Randomised and quasi-randomised controlled trials of all preparations of vitamin K used as a supplement compared to either no supplementation (or placebo) at any dose or route and for any duration, in children or adults diagnosed with cystic fibrosis (by sweat test or genetic testing).

List of included studies (3)

Beker 1997; Drury 2008

Participants

Children and adults with a diagnosis of CF (defined by sweat test or genetic testing or both). Exclusion criteria: Any intervention which may affect the interpretation of the effects of vitamin K or any allergy to vitamin K: * any anticoagulation in the past three months (will make interpretation of vitamin K effects on blood coagulation difficult); * bisphosphonates in the past six months (will make interpretation of vitamin K effects on bone metabolism difficult); * allergy to vitamin K.

Interventions

oral vitamin K 1mg/day

Outcome measures

Serum undercarboxylated osteocalcin levels; Serum vitamin K levels

Main results

Three trials (total 70 participants, aged 8 to 46 years) assessed as having a moderate risk of bias were included. One trial compared vitamin K to placebo, a second to no supplementation and the third compared two doses of vitamin K. No trial in either comparison reported our primary outcomes of coagulation and quality of life or the secondary outcomes of nutritional parameters and adverse events. Vitamin K versus control: two trials compared vitamin K to control, but data were not available for analysis. One 12â€•month trial (n = 38) compared 10 mg vitamin K daily or placebo in a parallel design and one trial (n = 18) was of crossâ€•over design with no washout period and compared 5 mg vitamin K/week for fourâ€•weeks to no supplementation for fourâ€•weeks. Only the 12â€•month trial reported on the primary outcome of bone formation; we are very uncertain whether vitamin K supplementation has any effect on bone mineral density at the femoral hip or lumbar spine (very lowâ€•quality evidence). Both trials reported an increase in serum vitamin K levels and a decrease in undercarboxylated osteocalcin levels. The crossâ€•over trial also reported that levels of proteins induced by vitamin K absence (PIVKA) showed a decrease and a return to normal following supplementation, but due to the very lowâ€•quality evidence we are not certain that this is due to the intervention. Highâ€•dose versus lowâ€•dose vitamin K: one parallel trial (n = 14) compared 1 mg vitamin K/day to 5 mg vitamin K/day for four weeks. The trial did report that there did not appear to be any difference in serum undercarboxylated osteocalcin or vitamin K levels (very lowâ€•quality evidence). While the trial reported that serum vitamin K levels improved with supplementation, there was no difference between the highâ€•dose and lowâ€•dose groups.

Authors' conclusions

There is very lowâ€•quality evidence of any effect of vitamin K in people with cystic fibrosis. While there is no evidence of harm, until better evidence is available the ongoing recommendations by national CF guidelines should be followed.

https://doi.org//10.1002/14651858.CD008482.pub6

See also

Jagannath VA, Thaker V, Chang AB, Price AI. Vitamin K supplementation for cystic fibrosis. Cochrane Database of Systematic Reviews 2020, Issue 6. Art. No.: CD008482. DOI: 10.1002/14651858.CD008482.pub6.

Keywords

non pharmacological intervention - diet; pharmacological_intervention; Supplementation; vitamins; Vitamin K; Vitamins; Malabsorption; Nutrition Disorders; Oral;