Vitamin K in infants

No. 2017/04e

Executive summary

Health Council of the Netherlands

All infants are given vitamin K after birth. A deficiency of this vitamin can lead to bleedings that can cause life-long disability, especially if they occur in the brain. The way in which infants are administered vitamin K varies by country. In the Netherlands, all infants receive vitamin K in oral form immediately after birth. This dose is sufficient for infants who are formula-fed since the vitamin K in this type of nutrition adequately protects them against late-onset bleedings. This is not the case for breast-fed infants; therefore, they receive subsequent doses of oral vitamin K.

In 2011, these subsequent doses were increased since in the Netherlands compared with other countries more bleedings occurred mainly in breast-fed infants with impaired fat absorption. These infants are less able to absorb vitamin K and therefore have a greater risk of a deficiency that could lead to a bleeding. Therefore, they represent a risk group. Recent data show that increasing the dose did not result in a reduction in the number of bleedings in this risk group. Therefore, the Committee on Nutrition of the Health Council of the Netherlands provided another overview of the latest scientific developments on vitamin K and will subsequently come up with a new recommendation.

Research on the optimal regimen of vitamin K administration has some limitations. There are no studies that directly compare the effect of different routes of administration of vitamin K to prevent bleeding. Therefore, the Committee relied on surveillance data on the efficacy of various foreign regimens. They showed that a single intramuscular administration of vitamin K provides better protection than current Dutch policy, including infants in the risk group.

There is also an existing oral regimen that generally appears to provide better protection than current Dutch policy: the regimen from Germany and Switzerland, among other countries. It is unclear, however, whether this regimen is also more effective in the risk group. Another disadvantage of oral administration is that compliance plays a key role and that, for example, diarrhoea may reduce the absorption of the vitamin.

Since the infants belonging to the risk group cannot be identified at birth, the Committee recommends adapting the policy for all breast-fed infants. It advises switching to single intramuscular administration of one milligram of vitamin K shortly after birth. An important consideration is that this form of administration is known to be effective in infants from the risk group.

In addition, the Committee recommends offering an oral alternative to parents who do not want to have their child injected. This should consist of three times two milligrams of vitamin K (at birth, after 4 to 6 days and 4 to 6 weeks) for breast-fed infants.

For infants who are formula-fed starting at birth, vitamin K administration can continue as it now is (one milligram orally shortly after birth).

The Committee expects that the recommended new regimen as compared with current administration policy could prevent two to five cases of late vitamin K bleedings per year. Health professionals involved in perinatal care can administer the vitamin K via both routes.

The Committee recommends discussing the importance and potential of vitamin K administration during pregnancy. Finally, it believes that providing appropriate information to both parents and professionals is important.

The Health Council of the Netherlands, established in 1902, is an independent scientific advisory body. Its remit is “to advise the government and Parliament on the current level of knowledge with respect to public health issues and health (services) research...” (Section 22, Health Act).
The Health Council receives most requests for advice from the Ministers of Health, Welfare and Sport, Infrastructure and the Environment, Social Affairs and Employment, and Economic Affairs. The Council can publish advisory reports on its own initiative. It usually does this in order to ask attention for developments or trends that are thought to be relevant to government policy.
Most Health Council reports are prepared by multidisciplinary committees of Dutch or, sometimes, foreign experts, appointed in a personal capacity.
The reports are available to the public.

Preferred citation:
Health Council of the Netherlands. Vitamin K in infants. The Hague: Health Council of the Netherlands, 2017; publication no. 2017/04e.