

Vitamin D is a friend of younger children

Many younger children are commonly affected by acute lower respiratory infection (ALRI) requiring hospitalization. ALRI occurs in the winter season associated with a reduction of ultraviolet-B radiation. Generally, low birth weight, non-exclusive breast feeding, parental smoking, and chronic diseases etc. are thought to be risk factors of ALRI. On the other hand, there is a potential preventive measure for respiratory syncytial virus, such as palivizumab. However, the indications for palivizumab are limited to low birth weight infants and congenital heart diseases in many countries, and its extreme expense restricts its usefulness.

We need to find more universal, simpler and cheaper preventive measures. Most researchers advocate the importance of vitamin D for preventing ALRI. The association between vitamin D insufficiency and ALRI severity is well known in Canada and the Middle East. Moreover, this association also exists in temperate regions such as Japan (1). Therefore we should pay attention to the existence of vitamin D insufficiency worldwide.

Breastfeeding has been reported to provide some protection against the development of ALRI. However, we must take into account the vitamin D content of breast milk. Low serum vitamin D concentrations have been reported to be quite common and it is likely that, under many circumstances, breast milk may not provide sufficient vitamin D for infants. Poor vitamin D status is one of the causal factors of ALRI, but it should not be blamed on breast feeding. Exclusive breastfeeding without adequate sun exposure or vitamin D supplementation is an important risk factor for vitamin D deficiency. We advocate that vitamin D supplements are given to lactating mothers, even in developed countries, such as Japan (2).

However, would the recommendation of a required dose of vitamin D be enough to prevent ALRI in any society? Furthermore, what is the precise oral vitamin D dose required for prevention of ALRI in younger children? Unfortunately, there is little literature published on this subject. Yet Karen S. Leis and colleagues give a clue to solving part of the question. In their case-control study, they described how increased vitamin D supplementation in younger children, compared with the ordinary requirement, might be protective for ALRI. An incremental amount of vitamin D supplementation is necessary according to age and body weight, not just a uniform requirement. Although this idea is acceptable in an area above latitudes greater than 40 degrees, we should be careful in deciding a proper dose for the Middle East and temperate regions.

In conclusion, we should advocate the importance of vitamin D for ALRI protection both in developing and developed countries in spite of climate, and establish a tailored dose for each person in each country.

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Footnote

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