

Vitamin D status of exclusively breastfed infants aged 2-3 months.

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Abstract

BACKGROUND: New Zealand in 2008 adopted WHO policy which recommends that all infants are exclusively breast fed until 6 months of age. The benefits of this policy for the infant are undisputed; however, this policy has the potential to adversely impact on infant vitamin D status. A number of countries now recommend that all breastfed infants receive daily vitamin D supplementation of 400 IU to prevent rickets. New Zealand has no policy on the vitamin D supplementation of 'low-risk' breastfed infants. There are no data on the vitamin D status of exclusively breastfed infants in the first few months of life in New Zealand.

AIM: To describe serum 25-hydroxy-vitamin D (25(OH)D) concentrations in exclusively breastfed infants aged 2-3 months.

DESIGN/METHODS: Healthy term exclusively breastfed infants who were receiving no vitamin D supplements were enrolled over a 15-month period. A capillary blood sample was obtained from each infant. Serum 25(OH)D was measured using isotope-dilution liquid chromatography-tandem mass spectrometry.

RESULTS: 94 infants were enrolled (mean age 10 weeks). Median 25(OH)D concentration was 53 nmol/l (IQR 14-100 nmol/l). 23 (24%) infants had serum 25(OH)D concentration <27.5 nmol/l. Infants enrolled during winter had a median (IQR) 25(OH)D serum concentration of 21 nmol/l (14,31). Infants enrolled during summer had a median (IQR) 25(OH)D concentration of 75 nmol/l (55-100) (winter vs summer, p<0.0001).

CONCLUSIONS: Vitamin D deficiency is prevalent in exclusively breastfed infants in New Zealand. Vitamin D supplementation should be considered as part of New Zealand's child health policy.

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Vitamin D levels of infants converted from nmol/l to the US common measurement for blood serum concentrations, ng/ml:

-Entire study:

Median = 21.2 ng/ml

24% of infants < 11 ng/ml

-Infants enrolled in winter:

Median = 8.4 ng/ml

Highest level = 12.4 ng/ml

-Infants enrolled in summer:

Median = 30 ng/ml