

# Abstract

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## Association of subclinical vitamin D deficiency in newborns with acute lower respiratory infection and their mothers.

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**BACKGROUND/OBJECTIVES:** There are other benefits of vitamin D than those for bone health. To determine the association of serum 25-hydroxy vitamin D (25(OH)D) concentrations in newborns with acute lower respiratory infection (ALRI) and without clinical signs of rickets, and their mothers. The design comprises a hospital-based case-control study.

**SUBJECTS/METHODS:** The study group consisted of 25 newborns with ALRI who were admitted to neonatal intensive care unit and their mothers. Controls were 15 healthy newborns of the same age as the study group and their mothers. A commercial radioimmunoassay was used to measure 25(OH)D concentrations in serum for assessing vitamin D status.

**RESULTS:** The two groups were similar in gestational week, birth weight, birth height, head circumference, age and gender. The mean serum 25(OH)D concentrations in the study group newborns were lower than those of the control group (9.12±8.88 ng/ml and 16.33±13.42 ng/ml, respectively) (P=0.011). Also, mean serum 25(OH)D concentrations in the mothers of the study group were lower than those in the mothers of the control group (13.38±16.81 ng/ml and 22.79±16.93 ng/ml respectively) (P=0.012). In 87.5% of all newborns and 67.5% of all mothers, serum 25(OH)D concentrations were lower than 20 ng/ml. The 25(OH)D concentrations of newborns were highly correlated with mothers' serum 25(OH)D concentrations.

**CONCLUSIONS:** Our findings suggest that newborns with subclinical vitamin D deficiency may have an increased risk of suffering from ALRI. The strong positive correlation between newborns' and mothers' 25(OH)D concentrations shows that adequate vitamin D supplementation of mothers should be emphasized during pregnancy especially in winter months.

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