Is low serum level of vitamin D risky for increased pulmonary morbidities in extremely immature newborns?

We read the currently published article entitled “Is there a potential link between vitamin D and pulmonary morbidities in preterm infants”

The authors found that the concentration of vitamin D was significantly lower in the premature preterm infants delivered ≤30 gestational weeks and/or between 30 and 34 gestational weeks who were complicated with respiratory distress syndrome (RDS) and bronchopulmonary dysplasia (BPD) than those who did not have RDS and BPD (the former age was significant in terms of RDS, and the latter age was significant in terms of both RDS and BPD), but there was no statistically significant difference of serum levels of vitamin D in newborns who were delivered in other gestational weeks, regardless of RDS and BPD or not. The authors hypothesized that the appropriate concentration of vitamin D is beneficial to lung maturation of human.

As shown by authors, the mean concentration of vitamin D seemed to be positively correlated with gestational age of the infants (35.0, 37.5, and 40.8 nmol/L for ≤30 gestational weeks, 30—34 gestational weeks, and 34—37 gestational weeks, respectively), although absence of statistical significance. In addition, the vitamin D-related compounds, including calcium and phosphorus, seemed to be absent of statistical difference in the mean serum levels among these three groups, between 2.2 and 2.3 mmol/L, and 2.7 and 3.3 mmol/L, respectively. All suggested that these parameters, such as vitamin D, calcium and phosphorus seemed to be relatively consistent in the infants delivered before 37 gestational weeks. Based on the current study by Dr. Aletayeb's article, the mean concentration of vitamin D of term infants (≥37 gestational weeks) between 84.4 and 110 nmol/L, regardless of occurrence of jaundice and non-jaundice. The combination of both findings might support that the appropriate concentration of vitamin D might be important for lung maturity of fetus. However, is it real? We guess that it is much more possible that the above-findings are co-incidental.

Furthermore, it is well known that adequate nutrition supplement, such as vitamin D and other trace elements or essential protein in pregnant women is important not only maintains peak health and performance for pregnant women themselves, but also affects fetal organ development and growth. Study has shown that lower maternal serum level of vitamin D (<37.5 nmol/L) contributed to an increased risk of preterm labors. In addition, maternal serum level of vitamin D is correlated with neonatal serum level of vitamin D, suggesting that low neonatal serum level of vitamin D is secondary to the low maternal serum level of vitamin D. Therefore, it is relatively confusing that low vitamin D is a cause or result of impairment of lung maturity in newborns.

The above-mentioned comments are not against the great works from authors. Since Dr. Yang's study is interesting, we are looking forward seeing the further discussion by authors.

Conflicts of interest

The authors declare that they have no conflicts of interest related to the subject matter or materials discussed in this article.

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