

***The comparative study of vitamin D serum levels relationship with early onset neonatal sepsis and its outcome (case-control study)***

***Abstract***

***Background and objective:*** Neonatal sepsis is a critical condition caused by a generalized bacterial infection in the first month of life. It begins with early onset (7 days of life) and sepsis with late onset (7-27 days) and sepsis in the hospital. Vitamin D is a steroid hormone that has numerous roles in the immune system and reduces inflammation. The relationship between neonatal early sepsis and maternal vitamin D levels has not been established in the studies. Therefore, the purpose of this study is to compare the relationship between serum vitamin D levels and early onset sepsis and the outcome of the disease.

***Methods :*** This study is a case-control study. In this study, newborns were enrolled after interviewing mothers of the newborns with satisfaction. In this study, 43 newborns admitted with early diagnosis of neonatal sepsis under the name of the case group in the neonatal ward of Boual Ali Ardabil Medical Center in 2012 were included. These infants entered the study census. Also, 43 healthy children with age, sex and weight were matched with the case group and were selected from infants admitted in the neonatal department (due to jaundice) and considered safe for sepsis. In these newborns after obtaining a history and collecting information regarding the demographic characteristics of infants, gestational age, delivery method, birth weight, measures taken for the baby at the time of admission, and the extraction of blood and biochemical tests. Was requested. Then, all the findings of neonatal examination as well as the responses of both groups of infants and their mothers were entered into the SPSS v21 statistical program and finally, data analysis was performed.

***Results:*** In this study, 86 neonates were studied, 43 neonates with sepsis and 43 healthy infants. In the study of neonates with sepsis, the mean age was 4.93 days and 72.1% were male. The most common complaints in restless neonates were 74.71%, jaundice in 67.44% and fever in 62.7% of infants. The mean birth weight of neonates was 33.3 kg, gestational age was 38.23 weeks. The duration of hospitalization was 2.5 days. In this study, the average age of mothers with a newborn with sepsis was 26.83 years. 23.3% of mothers had received vitamin D supplementation during pregnancy. Dairy consumption in these mothers was low and the majority of exposure was less than 15 minutes in the sun. In this study, a high percentage of infants in the study had severe to moderate vitamin D deficiency, although this percentage was higher in neonates with sepsis than in healthy subjects. There was no significant difference between the level of vitamin D and sepsis

***Conclusion:*** The results of this study showed that there is no significant difference between vitamin D and maternal levels in both groups. However, in the sepsis group, there is a significant relationship between maternal vitamin content and neonatal serum level. Also, there was no significant relationship between neonatal outcome and vitamin D levels.

***Keywords:*** Sepsis, neonate, Vitamin D.