Pathological Jaundice Risk Factors in the First Week of Neonatal Life

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ABSTRACT

Introduction: Neonatal jaundice is common, especially during the first week of life. According to existing evidence, 80% of preterm infants exhibit clinical signs such as yellowing of the skin and sclera due to elevated serum bilirubin levels. Extremely high bilirubin levels can lead to kernicterus, resulting in permanent brain damage. Given the importance of neonatal jaundice prevalence and the lack of extensive studies on its causes and frequency in the early days of life, investigating its causes for effective prevention and treatment is essential. This study aimed to examine the frequency of risk factors for pathological jaundice in the first seven days of neonatal life in patients admitted to Shariati Hospital in Isfahan in 2021.

Methods and Materials: This research is a cross-sectional study conducted on 350 neonates with jaundice at Shariati Hospital in Isfahan in 2021. Hyperbilirubinemia was the criterion for inclusion in this study. Neonate sampling was based on clinical outcomes. Additionally, the researcher collected data from medical records and interviews with mothers. Data were analyzed using SPSS version 23 statistical software. After recording demographic information and data related to delivery and pregnancy, the causes of jaundice were also recorded. Fisher's exact test and Chi-square test were used to compare the data.

Results: Among 350 neonates with jaundice who entered our study, 200 (57.1%) had physiological jaundice, and 150 (42.9%) had pathological jaundice. The mean gestational age was 38.08 ± 2.04 weeks. Of the 350 neonates, 197 were boys and 153 were girls. The most common causes of pathological jaundice were blood incompatibility (44.7%), dehydration (21.3%), infection (16%), G6PD deficiency (10.7%), and other causes (7.3%). Additionally, our study findings indicated no significant differences in pathological jaundice based on gestational age (p = 0.409), gender (p = 0.47), or birth weight (p = 0.158). However, it was found that the frequency of positive family history in neonates with pathological jaundice (60%) was significantly higher than in those with physiological jaundice (46.5%; p = 0.012).

Conclusion and Discussion: This study revealed that a positive family history in neonates with pathological jaundice was significantly higher than in those with unknown causes. Given the high prevalence of pathological jaundice and that it is the most common cause of readmission after maternal discharge, timely diagnosis and treatment can prevent permanent and untreatable complications such as brain and nerve damage like kernicterus. Preventive measures and appropriate education should be implemented to reduce this jaundice.

Keywords: Hyperbilirubinemia, Jaundice, Risk factors

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