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# DIAGNOSTIC FEATURES OF NEONATAL JAUNDICE IN NEWBORNS

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## Abstract

Neonatal jaundice is one of the most common clinical conditions observed in newborn infants during the first days of life. It is characterized by yellow discoloration of the skin and sclera caused by elevated levels of bilirubin in the blood. In most cases neonatal jaundice is physiological and resolves without serious consequences, but in some cases it may indicate underlying pathological processes that require immediate medical attention. The aim of this study is to analyze the diagnostic features of neonatal jaundice in newborns and evaluate the main clinical and laboratory indicators used in pediatric practice. The study was conducted based on the analysis of scientific literature and clinical observations related to neonatal jaundice. The findings indicate that timely diagnosis of neonatal jaundice using clinical assessment and laboratory tests is essential to prevent severe complications such as bilirubin encephalopathy and kernicterus. Early identification of risk factors and appropriate treatment strategies significantly improve neonatal outcomes.

## Keywords

neonatal jaundice, newborns, bilirubin, neonatal diagnosis, hyperbilirubinemia, pediatrics.

## Introduction

Neonatal jaundice is a common condition that occurs in many newborns during the early postnatal period. It is primarily associated with elevated levels of bilirubin in the blood, which results from the breakdown of fetal hemoglobin and the immaturity of the neonatal liver [1]. According to international medical statistics, approximately 60 percent of full term newborns and up to 80 percent of premature infants develop some degree of jaundice during the first week of life [2].

Physiological jaundice is generally considered a normal transitional condition in newborns. However, pathological jaundice may occur due to hemolytic diseases, infections, metabolic disorders, or liver dysfunction [3]. If bilirubin levels increase excessively, it may lead to serious neurological complications including bilirubin encephalopathy and kernicterus.

Early diagnosis plays a crucial role in identifying infants who require medical intervention. Clinical evaluation, laboratory testing, and monitoring of bilirubin levels are essential components of neonatal jaundice diagnosis [4]. Modern diagnostic approaches include measurement of total serum bilirubin, transcutaneous bilirubinometry, and assessment of risk factors associated with hyperbilirubinemia.

Understanding the diagnostic characteristics of neonatal jaundice is important for pediatricians and neonatologists in order to provide timely treatment and prevent complications. Therefore, the purpose of this study is to examine the diagnostic features of neonatal jaundice and evaluate the effectiveness of commonly used diagnostic methods.

## Methods

This study was conducted using a descriptive analytical method based on the review of scientific literature and clinical guidelines related to neonatal jaundice. Medical textbooks, research articles, and pediatric clinical studies were analyzed to identify the main diagnostic criteria and risk factors associated with neonatal jaundice.

The study focused on clinical signs such as skin discoloration, scleral icterus, feeding difficulties, and lethargy in newborns. In addition, laboratory diagnostic methods were evaluated, including measurement of total serum bilirubin, direct and indirect bilirubin levels, and blood group compatibility testing. These laboratory parameters are widely used to determine the severity of hyperbilirubinemia and differentiate between physiological and pathological jaundice [5].

Transcutaneous bilirubin measurement was also considered as a non invasive diagnostic method that allows rapid screening of newborns for elevated bilirubin levels. The results of these diagnostic methods were compared and analyzed to determine their effectiveness in clinical practice.

## Results

### Table 1

Common Diagnostic Indicators of Neonatal Jaundice

| Diagnostic indicator | Description | Clinical significance |
|---|---|---|
| Skin yellow discoloration | Yellow color of skin and sclera | Primary clinical sign |
| Total serum bilirubin | Laboratory measurement of bilirubin | Determines severity of jaundice |
| Transcutaneous bilirubinometry | Non invasive bilirubin measurement | Early screening method |
| Blood group testing | Detection of Rh or ABO incompatibility | Identifies hemolytic disease |
| Liver function tests | Assessment of liver enzymes | Helps detect pathological causes |

The results of the analysis showed that clinical observation combined with laboratory evaluation is the most effective approach for diagnosing neonatal jaundice. Skin discoloration and scleral icterus remain the earliest visible indicators of increased bilirubin levels. Laboratory measurements of bilirubin provide accurate information about the severity of the condition and help physicians determine appropriate treatment strategies.

## Discussion

The findings of this study confirm that neonatal jaundice remains one of the most frequently encountered conditions in neonatology. The occurrence of jaundice in newborns is closely related to physiological changes that occur during the transition from intrauterine to extrauterine life. The breakdown of fetal hemoglobin and the immaturity of hepatic enzymes responsible for bilirubin metabolism contribute significantly to the development of hyperbilirubinemia [6].

Physiological jaundice typically appears between the second and fourth day of life and resolves within one to two weeks without medical intervention. However, pathological jaundice may occur earlier and is often associated with hemolytic diseases, infections, or metabolic disorders [7]. In such cases, early diagnosis becomes critical to prevent complications.

Advancements in diagnostic technology have improved the early detection of neonatal jaundice. Non invasive transcutaneous bilirubinometry has become widely used as a screening method, allowing healthcare professionals to identify infants at risk without repeated blood sampling [8]. Laboratory confirmation through serum bilirubin measurement remains the gold standard for diagnosis.

Preventive strategies and early management significantly reduce the risk of severe complications. Phototherapy and exchange transfusion are commonly used treatment methods when bilirubin levels exceed safe thresholds. Continuous monitoring of newborns during the first days of life remains essential for timely diagnosis and intervention.

## Conclusion

Neonatal jaundice is a common condition observed in newborn infants and is primarily associated with elevated bilirubin levels during the early neonatal period. While physiological jaundice usually resolves without complications, pathological forms may lead to serious neurological damage if not diagnosed and treated in time. Early clinical evaluation combined with laboratory diagnostic methods plays a crucial role in identifying newborns at risk. Modern diagnostic techniques such as transcutaneous bilirubin measurement provide effective tools for early screening. Timely diagnosis, proper monitoring, and appropriate treatment strategies are essential to prevent complications and ensure the healthy development of newborn infants.

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