North Asian International Research Journal of Pharmaceutical & Medical Sciences

IRJIF: 5.012

ISSN: 2456-8287 Vol. 7, Issue-8 August-2023

Index Copernicus Value: 64.15 Fulfill MCI Criteria Indian Citation Index

NAIRJC A Peer Reviewed Refereed Journal

DOI: 10.5859/nairjpms.2023.10.8.5

ETIOLOGY OF NEONATAL JAUNDICE

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ABSTRACT

This research paper explores the underlying causes of jaundice in newborns. Jaundice, characterized by yellowing of the skin and eyes, poses a significant clinical concern among neonates. This study emphasizes that jaundice, while often benign, can also be a life-threatening condition in newborns, with various contributing factors. Physiological jaundice, prevalent in most cases, and pathological jaundice, observed in certain regions, are the primary classifications. The paper provides insights into jaundice's introduction, types, etiological factors, bilirubin level assessment, clinical strategies for managing hyperbilirubinemia, and measures for parents of affected infants.

KEYWORDS: ***hyperbilirubinemia, jaundice, newborns, kernicterus, neonatal, infants.***

INTRODUCTION

Neonatal jaundice, marked by the yellow discoloration of a newborn's skin and the whites of their eyes, indicates elevated bilirubin levels in their blood. Hyperbilirubinemia, an excessive accumulation of bilirubin, is the medical term for this condition. Typically emerging within the initial five days after birth, jaundice may require follow-up examination between the third and fifth days after birth. While often transient and benign, severe cases warrant considerable attention, as untreated hyperbilirubinemia can lead to the potentially lifelong complications associated with kernicterus.

Plate 1

Plate 1: shows yellow Color of skin

CAUSES:

The occurrence of neonatal jaundice arises from an excess of bilirubin that surpasses the infant's capacity to eliminate it. Bilirubin, a byproduct of the breakdown of aging red blood cells, is usually managed through the placenta during pregnancy. Post-birth, the infant's body must regulate bilirubin independently. Physiological jaundice, prevalent among neonates, occurs due to the underdeveloped bilirubin elimination capacity of their organs. This type of jaundice manifests around 24 hours after birth, peaks between the third and fourth days, and generally resolves within a week. Pathological jaundice, though less common, may arise from infections, digestive system anomalies, or blood type incompatibilities, typically presenting within the first day after birth.

Plate 2

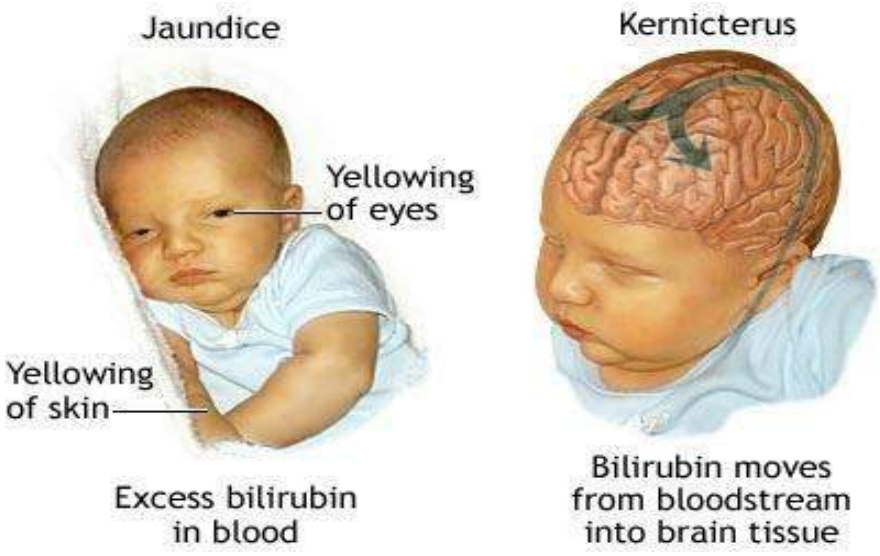

Plate 2: Shows Effects of Jaundice in newborns

TYPES OF JAUNDICE:

Neonatal jaundice is categorized into three types:

[1]. Hemolytic jaundice, resulting from red blood cell destruction and leading to increased bilirubin production and anemia;
[2]. Obstructive jaundice, arising from blockages in bilirubin's liver cell production and bile passage.
[3]. Hepatocellular jaundice, stemming from liver cell damage due to viral infections or toxic agents.

SYMPTOMS:

Manifesting usually between one and five days after birth, jaundice is characterized by yellowing of the skin and face. Infants with elevated bilirubin levels might exhibit lethargy, poor feeding, irritability, arching of the back, and a distinctive high-pitched cry. A high bilirubin level can be dangerous. Severe hyperbilirubinemia can have serious consequences and necessitates immediate medical attention.

DIAGNOSIS:

Your baby's doctor will do a physical exam and ask you questions about your health and your baby's health. For example, the doctor might ask if you and your baby have different blood types. The doctor may place a device against your baby's skin to check your baby's bilirubin level. A blood test for bilirubin may be done to find out if your baby needs treatment. More tests may be needed if the doctor thinks that a health problem is causing too much bilirubin in the blood. Can jaundice be dangerous? In the vast majority of cases, jaundice isn't anything to worry about. But if a baby's bilirubin levels get too high, jaundice can cause permanent damage to the nervous system. A very small percentage of jaundiced newborns develop a condition called kernicterus, which can result in deafness, delayed development, or a form of cerebral palsy. Dangerous levels of jaundice Jaundice becomes dangerous when bilirubin levels exceed 20 to 25 milligrams per deciliter. High bilirubin levels, which indicate severe jaundice, can cause extreme sleepiness, seizures, muscle rigidity and intellectual disability. Are some babies more prone to jaundice than others? Yes, babies are more likely to have noticeable jaundice if they:

- has a sibling who had jaundice
- had bruises at birth (the red blood cells that are part of the bruises are broken down and produce bilirubin as a byproduct)
- were born prematurely, because their immature liver may not be able to handle the bilirubin levels
- have a certain genetic disorder (such as Gilbert's syndrome; inherited red blood cell membrane defects; or galactosemia, an inherited metabolic disorder)

- have a certain disease, such as cystic fibrosis or hypothyroidism Jaundice during a baby's first 24 hours can also be caused by serious conditions such as liver, gallbladder, and intestinal disorders, an infection, excessive birth trauma, certain diseases, or extreme prematurity (birth before 28 weeks gestation). Rh-incompatibility and blood-type incompatibility can also cause jaundice in the first day.

TREATMENT AND PREVENTION:

Neonates with bilirubin levels exceeding normal thresholds require treatment, often involving phototherapy, which utilizes specific light wavelengths to facilitate bilirubin elimination. Vigilant observation, adherence to follow-up appointments, and responsive actions based on changing skin color are essential. Adequate feeding plays a pivotal role in bilirubin reduction, with breastfeeding recommended 8 to 12 times daily and bottle-fed infants adhering to a consistent schedule.

Your baby will need treatment if the bilirubin level is above the normal range for newborns. He or she will be put under a type of fluorescent light to treat the jaundice. This is called phototherapy. The skin absorbs the light, which changes the bilirubin so that the body can more easily get rid of it. The treatment is usually done in a hospital. But babies sometimes are treated at home. Don't try to treat jaundice by placing your baby in the sun or near a window. Special lights and controlled surroundings are always needed to treat jaundice safely. If a health problem caused the jaundice, your baby may need other treatment. For example, a baby with severe jaundice caused by Rh incompatibility may need a blood transfusion.

PREVENTIONS

If your baby has jaundice, you have an important role to play:

- Look closely at your baby's skin 2 times a day to make sure that the color is returning to normal. If your baby has dark skin, look at the white part of the eyes.
- Take your baby for any follow-up testing your doctor recommends.
- Call the doctor if the yellow color gets brighter after your baby is 3 days old. The best thing you can do to reduce jaundice is to make sure that your baby gets enough to eat. That will help your baby's body get rid of the extra bilirubin.
- If you are breastfeeding, feed your baby about 8 to 12 times every 24 hours.
- If you are feeding your baby from a bottle, stay on your schedule (usually about 6 to 10 feedings every 24 hours).

CONCLUSION:

Neonatal jaundice, while usually manageable, necessitates prompt diagnosis and treatment to avoid complications. Research and medical advancements continue to refine treatment approaches, including phototherapy and other interventions. To minimize the impact of jaundice, caregivers' vigilance, adherence to feeding practices, and medical consultations are crucial.

REFERENCES:

[1]. Colletti, J. E., Kothari, S., Jackson, D. M., Kilgore, K. P., & Barringer, K. (2007). An emergency medicine approach to neonatal hyperbilirubinemia. Emergency Medicine Clinics of North America, 25(4), 1117-1135.

[2]. Dobbs, R. H., & Cremer, R. J. (1975). Phototherapy. Archives of Disease in Childhood, 50(11), 833-836.

[3]. Shah, Z., Chawla, A., Patkar, D., & Pungaonkar, S. (2003). MRI in kernicterus. Australasian Radiology, 47.

[4]. Cremer, R. J., Perryman, P. W., & Richards, D. H. (1958). Influence of Light On The Hyperbilirubinemia Of Infants. The Lancet, 271(7030), 1094-1097.

[5]. Madlon-Kay, D. J. (1997). Recognition of the Presence and Severity of Newborn Jaundice by Parents, Nurses, Physicians, and Icterometer. Pediatrics.

[6]. Cappellini, M. D., Di Montemuros, F. M., Sampietro, M., Tavazzi, D., & Fiorelli, G. (1999). The interaction between Gilbert's syndrome and G6PD deficiency influences bilirubin levels. British Journal of Haematology.

[7]. Boo, N. Y., & Ishak, S. (2007). Prediction of severe hyperbilirubinaemia using the Bilicheck transcutaneous bilirubinometer. Journal of Paediatrics and Child Health, 43(4), 297-302.

[8]. Olusanya, B. O., Osibanjo, F. B., & Slusher, T. M. (2015). Risk factors for severe neonatal hyperbilirubinemia in low and middle-income countries: A systematic review and meta-analysis.

[9]. American Academy of Pediatrics Practice Parameter (1994). Management of hyperbilirubinemia in the healthy term newborn. Pediatrics, 94, 558-565.

[10]. Young Infants Clinical Signs Study Group (2008). Clinical signs that predict severe illness in children under age 2 months: A multicentre study. Lancet, 371(9607), 135-142.