



What Do You Know About The Hyperbilirubinemia In Newborn ?

Sawsan Mohamed Elfurgany , 2nd Year Medical Student

Libyan International Medical University

Faculty of Basic Medical Science



Introduction

Hyperbilirubinemia is accumulation of unconjugated bilirubin (UCB) and usually benign. Product of heme proteins in the blood during the first weeks of the life . These may lead to jaundice neonatal (also called icterus) about 60% of full term and 80% of preterm. The excess bilirubin may exist in the unconjugated (indirect) or the conjugated (direct). Cases in newborn are associated with hemolytic disease. The increase bilirubin cause the infant skin and sclera at look yellow. Bilirubin is yellow compound . Normal range of bilirubin is 0.2 – 1.2 mg/dl .(1)

Bilirubin

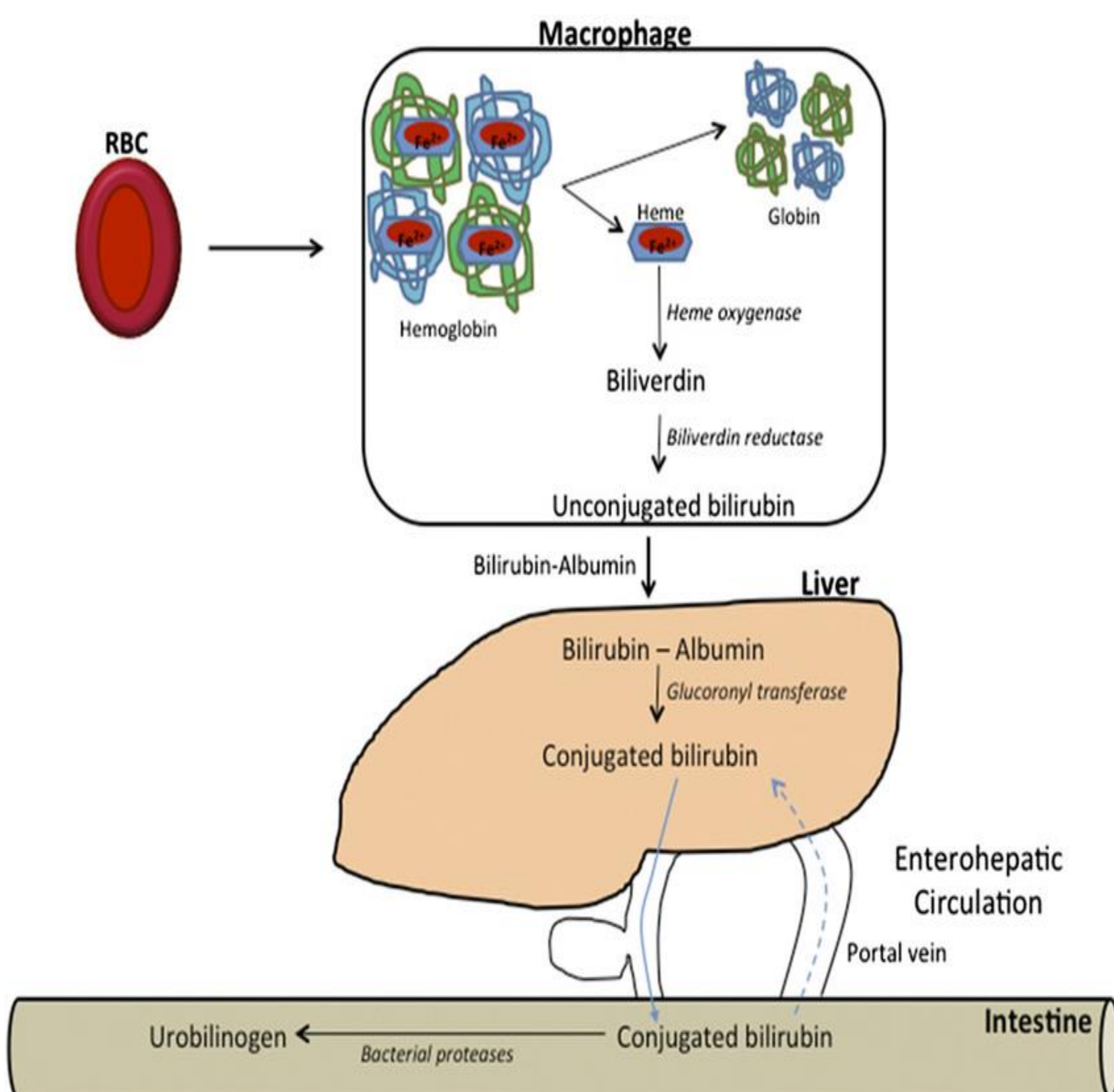


Figure 1 : synthesis and normal physiological of bilirubin. (1)

Pathogenesis

When bilirubin in the blood exceeds 1 mg/dl hyperbilirubinemia may be due to the production of more bilirubin. result to hepatic damage or In the absence of hepatic damage occur obstruction of excretory ducts of the liver by prevention the excretion of bilirubin . Will also cause hyperbilirubinemia . Bilirubin accumulates in the blood and when it reaches a certain concentration it diffuse into the tissue . Which then become yellow that condition is called jaundice (figure 2) . The majority of newborn infants show a rise in unconjugated bilirubin (UCB). Hyperbilirubinemia may be classified as retention hyperbilirubinemia or regurgitation hyperbilirubinemia because of its hydrophobicity . Only unconjugated bilirubin can cross the blood-brain barrier into the CNS; thus, encephalopathy due hyperbilirubinemia (kernicterus) can occur only in connection with unconjugated bilirubin. As found in retention hyperbilirubinemia only conjugated bilirubin can appear in urine. accordingly, choluric jaundice occur only in regurgitation hyperbilirubinemia. And acholuric jaundice occur only in the presence of an excess Of unconjugated bilirubin. (1,2)



Figure 2: jaundice in newborn.

Treatment

1-Phototherapy (light therapy);-the baby is put under a special light. The special light converts bilirubin to more polar. These photo isomers can be excreted into the bile without conjugation to glucuronic acid.

2-Exchange blood transfusion;- the baby's blood is repeatedly withdrawn and then replaced with donor blood.

3- Yinzhihuang oral liquid, a well-known Chinese herbal formula. Is a clinical drug for the treatment of neonatal jaundice. Combined with phototherapy is effective in bilirubin reduction. (2)

Conclusion

Hyperbilirubinemia in newborn is increase level of bilirubin in blood . the neonatal jaundice is caused by the unconjunction bilirubin imbalance between the production and elimination. Jaundice in newborn can be treatment by many methods. Don't treatment for jaundice cause neurotoxicity. jaundice in neonate not a disease is sign on present disease in body ex; (hepatic damage or obstructive excretory duct).

References

- 1/ROBERT K. MURRAY , DARLY K. GRANNER , VICTOR W. RODWELL HARPER'S Illustrated BIOCHEMISTRY 27TH Edition Chapter 31 p(287-291).
- 2/ RICHARD A. HARVEY Lippincott's Illustrated Reviews 6th Edition Chapter 21 (518,520).