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Evaluation and management of Jaundice in the Newborn

1. Definition or Key Clinical Information (Kemper et al., 2022; NICE, 2023; McIntyre, 2020; Okulu, 2024)

Jaundice occurs in about 60% of term and 80% of preterm infants. It is a yellow coloring of the skin and sclera that occurs because of the newborn's inability to metabolize bilirubin quickly and efficiently. As hemoglobin is broken down, bilirubin is created, but the newborn's liver enzyme systems are still immature. This is usually harmless, but in extreme cases can lead to acute bilirubin encephalopathy and kernicterus, which can cause neurological dysfunction and death. Breastfed babies are more likely to develop jaundice and in breastfed babies, it can persist until 1 month and still be harmless. This is called physiologic jaundice. In breastfeeding babies, physiologic jaundice can occur in two ways: breastfeeding jaundice, where there is inadequate feeding and excess weight loss, which usually peaks 3-5 days post birth, and breast milk jaundice, where jaundice persists despite adequate feeding and weight gain. Jaundice can also occur from bruising, infection, polycythemia, and hemolysis due to Rh incompatibility, ABO incompatibility, or another blood group antigen (pathological jaundice). Jaundice in the first 24 hours of life can indicate hemolysis.

2. Assessment

i. Risk Factors (Kemper et al., 2022; NICE, 2023; McIntyre, 2020; Okulu, 2024)

- Birth trauma or bruising, prematurity, evidence of infection, sepsis, Down Syndrome
- Family history of hemolytic disease of the newborn, red blood cell diseases, or a sibling who needed phototherapy
- Maternal antibodies in the prenatal period
- Poor feeding/dehydration
- Visible jaundice in the first 24 hours after birth
- Macrosomic infant of a diabetic mother

ii. Subjective Symptoms (McIntyre 2020; NICE, 2023)

- Skin (blanched), sclera, or gums appear yellow in bright sunlight
- Excessive weight loss, lethargy, or uninterested in feeding
- Pale stools and dark urine

iii. Objective Signs (NICE, 2023; Okwundu et al., 2023)

- bilirubin levels >13.3 mg/dL at 1 day, >17 at 2 days, >19.8 at 3 days, or >21.8 using a transcutaneous bilirubinometer (TcB) or total serum bilirubin (TSB) indicates need for phototherapy

Practice Guideline for jaundice in the newborn

Updated Winter 2025

v. Clinical Test Considerations (McIntyre 2020; NICE, 2023; Okulu, 2024)

- TcB if visual inspection is positive
- TSB if TcB is ≥ 15 mg/dL or within 3 mg/dL of the phototherapy threshold
- Direct Coombs' test, blood group and Rh type for mother and baby to rule out hemolysis
- hemoglobin to assess anemia and polycythemia.

vi. Differential Diagnosis (Kemper et al., 2022)

- Differential diagnoses are mostly related to the etiology of jaundice (non-exhaustive list): hemolysis, neonatal cholestasis, genetic conditions, jaundice caused by infection, anemia, liver disease, polycythemia

3. Management plan

i. Therapeutic measures to consider within the CPM scope (Horn et al., 2021; Kemper et al., 2022; NICE, 2023)

- If bilirubin is within 3 mg/dL of threshold for phototherapy, repeat test in 24 hr
- If bilirubin is more than 3 mg/dL lower than threshold for phototherapy, continue visual inspection at regular check-ups.
- Encourage parents to place baby in front of a sunny window in a warm room, diaper only, as often as possible.

ii. Therapeutic measures commonly used by other practitioners (McIntyre, 2020)

- Phototherapy
- Exchange transfusion

iii. Ongoing care (Kemper et al., 2022; NICE, 2023)

- Daily weight checks if baby has lost excess weight
- Check in with parents about visual assessment at all postpartum visits
- If bilirubin is within 3 mg/dL of threshold for phototherapy, repeat test in 24 hr
- Discontinue window light baths as visual inspection shows return of regular color

iv. Indications for Consult, Collaboration, or Referral (Kemper et al., 2022; NICE, 2023)

- Referral for phototherapy if bilirubin is ≤ 1.9 mg/dL from threshold and less than 24 hr old or ≤ 1 from threshold and over 24 hr
- Immediate referral if bilirubin is in excess of threshold

v. Client and family education (Horn et al., 2021; NICE, 2023)

- How to do a visual inspection for jaundice and when peak times for physiologic jaundice (3-5 days)
- Appropriate feeding schedule and how to be sure baby is transferring milk
- Appropriate sunning technique and ensuring a warm room temperature
- When and why phototherapy might be considered and risk factors

4. References

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