

Newborn jaundice: Time for prevention?

A newborn boy of South Asian descent is readmitted to hospital at five days of age because of jaundice. He was born at 37 weeks gestation, with good APGAR scores, after an uneventful pregnancy to a primiparous 28-year-old O-positive woman. His birth weight was 3.37 kg, and he was exclusively breastfed. His initial discharge from the nursery occurred at 36 h of age, on a Thursday before a long weekend. He was not noted to be jaundiced at discharge. His worried parents brought him to the emergency department because they thought that he was too sleepy while feeding at the breast, and observed that he was having less wet diapers and turning yellow in colour.

On physical examination, he was icteric, afebrile, non-toxic and weighed 3.25 kg; he was not dehydrated. He had no hepatosplenomegaly, no signs of bruising and no abnormal neurological manifestations. Initial investigations showed a normal complete blood count and a normal urinalysis, with a negative urine culture. Further investigations revealed an A-positive blood grouping, a positive Coombs test and a high serum total bilirubin of 490 $\mu\text{mol/L}$, with a direct component of 14 $\mu\text{mol/L}$. He received double phototherapy and a 10% dextrose and saline solution intravenously; he continued breastfeeding. The jaundice decreased rapidly and he was discharged home with close follow-up, including a hearing test.

LEARNING POINTS

- Jaundice is still a major issue in term newborns. A CPSP study confirmed 258 cases of severe neonatal hyperbilirubinemia, with a mean peak total bilirubin level of 471 $\mu\text{mol/L}$. The majority (70%) of these cases were readmitted to hospital after being discharged as normal newborns.
- Severe hyperbilirubinemia is the most common cause of infant readmission to hospital in Canada and the United States, and carries the possible risk of kernicterus and bilirubin-induced encephalopathy.
- Recommended preventive measures include:
 - An assessment of all newborns for risk factors associated with potential hyperbilirubinemia, such as blood group incompatibility, a previously affected sibling, cephalhematoma, less than 38 weeks gestation at birth, risk of glucose-6-phosphate dehydrogenase deficiency and jaundice appearing in the first 24 h.
 - Documentation of a predischarge transcutaneous and/or serum bilirubin in the first 72 h of life for all newborns, or before if there are any concerns.
 - If no concerns, the serum bilirubin could be performed simultaneously with the newborn screening test.
 - Transcutaneous bilirubin measurements are less reliable in dark-skinned infants and premature infants.
 - The practice of plotting bilirubin results on the predictive nomogram before discharge, based on age in hours and gestational age, to identify the at-risk population.
 - A copy of the nomogram should be given to the parents to be brought to the infant's follow-up visit.
 - Confirmation of follow-up with a health care professional skilled in the assessment of feeding issues and jaundice in newborns, within two or three days, for all infants discharged less than 48 h after birth.
 - The establishment of community programs encouraging and supporting breastfeeding.
 - A follow-up hearing test in children with severe hyperbilirubinemia, because it is important to detect deafness as early as possible to provide needed therapies.
- To better delineate the risk factors associated with the long-term sequelae of severe hyperbilirubinemia, the CPSP is presently conducting a follow-up study on kernicterus.

Heightened awareness among treating physicians, other health care professionals and the general public will help in detecting jaundice earlier, and will ensure prompt diagnosis and treatment, with the goal of preventing severe hyperbilirubinemia and its long-term sequelae.

The Canadian Paediatric Surveillance Program (CPSP) is a joint project of the Canadian Paediatric Society and the Public Health Agency of Canada, which undertakes the surveillance of rare diseases and conditions in children and youth. For more information, visit our Web site at <www.cps.ca/cpsp>.