The challenge of jaundiced newborns – Unravelling the etiology

The attending physician in the nursery examines a jaundiced 20-h-old term, breastfed, white newborn. He is afebrile, nontoxic and well-nourished, weighs 3.8 kg and measures 50 cm, with a head circumference of 34 cm, but has a weak sucking reflex. Though icteric, he has no hepatosplenomegaly and no bleeding signs. His white blood cell count is 11,100 with a normal differential. His hemoglobin is 95 g/L and his platelet count is 258×10^9/L. Further investigations reveal a serum indirect bilirubin of 200 µmol/L, a negative Coombs test, identical O positive mother-son blood group and a negative glucose-6-phosphate dehydrogenase test (G6PD). Double phototherapy is immediately initiated. The father informs the physician that family members were splenectomized for a blood problem. Final results included microspherocytes with normal mean corpuscular volume, reticulocytosis of 10% of total red blood cells and a positive osmotic fragility test confirming hereditary spherocytosis.

LEARNING POINTS

- The appearance of jaundice in the first 24 h of life is pathological and always deserves a complete assessment.
- Between 1994 and 2001, 90 cases of kernicterus were reported in the United States.
- Early signs of bilirubin encephalopathy include lethargy, irritability, poor suction and hypertension. With early detection and treatment, this condition can be reversed.
- As a result, professional follow-up of all infants discharged less than 48 h after birth is essential within two to three days.
- Initial investigations, ideally before initiation of treatment, should include a complete blood count, smear and blood group, serum bilirubin (total and direct), and Coombs and G6PD tests.
- A thorough family history is important to detect previous cases of phototherapy, exchange transfusion, G6PD deficiency, hemolytic anemia and splenectomy.
- Spherocytosis is the most common cause of congenital hemolytic anemia with an autosomal dominant inheritance, even though in 10% to 25% of cases, the family history is negative.

The Canadian Paediatric Surveillance Program (CPSP) is a joint project of the Canadian Paediatric Society and Health Canada's Centre for Infectious Disease Prevention and Control that undertakes the surveillance of rare diseases and conditions in children. For more information visit our Web site at <www.cps.ca/english/cpsp> or <www.cps.ca/francais/pcsp>.