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Maria Helena Pimentel[1], Celeste Antão[1]

[1]LiveWell – Research Centre for Active Living and Wellbeing. Instituto Politécnico de Bragança, Campus de Santa Apolónia - 5300-253 Bragança, Portugal.

Clinical Case Report: Severe Neonatal Jaundice due to ABO Incompatibility

Clinical Case

A male newborn, delivered at 38 weeks via cesarean section due to fetal distress, weighed 2.9 kg at birth. He had low APGAR scores-4 at the 1st minute and 6 at the 5th-indicating clinical instability. He was admitted to the neonatal unit with severe jaundice, respiratory distress, and hemodynamic instability. Initial labs revealed anemia (hemoglobin 7 g/dL) and elevated indirect bilirubin. A positive direct Coombs test confirmed hemolytic anemia due to ABO incompatibility, which exacerbated the jaundice.Despite initiation of intensive phototherapy, bilirubin levels remained critically high, raising concern for bilirubin encephalopathy. Given the lack of response and risk of neurological damage, an exchange transfusion was promptly indicated. This therapeutic procedure involves replacing the infant's blood with donor blood to reduce bilirubin levels and remove maternal antibodies. The newborn was placed in a supine position, and the transfusion was performed in stages, replacing approximately 85% of his blood volume with double the volume of fresh donor blood. The procedure was carried out under continuous monitoring of vital signs, laboratory parameters, and strict hemodynamic control.

Discussion

This case is consistent with hemolytic disease of the newborn (HDN) caused by ABO incompatibility—a common cause of early-onset jaundice. The newborn's clinical instability was likely intensified by anemia and hyperbilirubinemia. The exchange transfusion was timely and crucial, both to halt hemolysis and prevent bilirubin-induced neurologic dysfunction.

Conclusion

This case emphasizes the importance of early identification and prompt management of severe hyperbilirubinemia in neonates. Exchange transfusion remains the gold standard when conservative measures fail. Early, aggressive treatment in such cases is essential to prevent irreversible complications such as kernicterus and to improve overall neonatal outcomes.

Keywords: Hemolytic Anemia, ABO Incompatibility, Exchange Transfusion, Clinical Case

Biography

Prof. Maria Helena Pimentel is a distinguished academic and researcher at the Polytechnic Institute of Bragança (IPB), Portugal, affiliated with the School of Health. With a background in psychology, she has made significant contributions to health sciences, focusing on public health, gerontology, and health education. Her extensive research encompasses topics such as the impact of COVID-19 on mental health, substance use among university students, and the well-being of institutionalized elderly populations.

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