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First Do No Harm: A Call to Improve the Care of Infants with Hyperbilirubinemia

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In this month's *Hospital Pediatrics*, DePorreet al (10.1542/hpeds.2020-0161) highlight the high utilization and variability of testing and intravenous fluid (IVF) therapy among a Pediatric Health Information System sample of infants admitted for neonatal jaundice. The high degree of variability in treatment of these infants is not unexpected given heterogeneous systems of care, the powerful influence of institutional culture and, as the authors acknowledge, room for interpretation in this AAP policy statement. More surprising is just how much testing is being performed.

Let's think through the logic of this testing strategy for a moment. Over 45% of infants in this sample received direct antiglobulin testing (DAT), presumably to screen for isoimmune hemolysis. However, DAT has notoriously low sensitivity for detecting hemolysis in neonates. While we may think that obtaining a complete blood count will reveal anemia indicative of hemolysis, infants have a robust hematopoietic system such that even high amounts of hemolysis may not cause anemia.[1,2] Any abnormalities in these tests may lead physicians to order a reticulocyte count to indirectly assess the degree of hemolysis. All of this testing might be useful if it prevented ordering even more tests to elicit the etiology of jaundice, particularly in sick infants. However, even these infants wouldn't necessarily benefit from the specialized and expensive treatment once recommended for isoimmune hemolysis.

Indeed, we are likely adding cost without clear benefit and may, in fact, be causing harm. Although this observational study was limited by lack of longitudinal data and the sickest infants were excluded, the authors found very few differences in hospital-level outcomes between the most judicious and heaviest users of tests and IVF, suggesting that these tests and treatment may not be necessary.

Findings of this study should be a call to arms for providers, hospitals, policy makers, and researchers to improve the care of otherwise healthy infants admitted with hyperbilirubinemia. We believe this can be accomplished through several steps:

- Update the AAP policy statement that incorporates the trove of evidence that has accumulated since its publication 16 years ago
- Implement high value care for infants with hyperbilirubinemia within academic and community hospital systems using established quality improvement methodologies

- Change our culture from a focus on missing a rare disease at all costs to preventing harm through judicious use of tests and interventions
- Research risk stratification of these infants to reduce the number needed to treat for inpatient phototherapy

References

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- Phototherapy for Neonatal Unconjugated Hyperbilirubinemia: Examining Outcomes by Level of Care
- The Utility of Inpatient Rebound Bilirubin Levels in Infants Readmitted After Birth Hospitalization for Hyperbilirubinemia
- A Quality Project to Improve Compliance With AAP Guidelines for Inpatient Management of Neonatal Hyperbilirubinemia
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