



As Breastfeeding Rates Rise, Are We Seeing More Jaundice?

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A number of recent trends have turned the spotlight on neonatal jaundice and bilirubin toxicity. The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) just issued a "Sentinel Event Alert,"¹ to draw clinicians' attention to breastfeeding as a possible risk factor for severe hyperbilirubinemia. In a May, 2001, *Pediatrics* article, Harris et al² name three trends as contributing to increased risk: a) relaxed guidelines for treatment of elevated bilirubin, b) increased prevalence of breastfeeding, and c) early discharge from hospitals. A 1998 study found that hyperbilirubinemia was the most common cause for hospital readmission in babies who had gone home before 72 hours of age.³

Jaundiced babies can suffer brain injury from kernicterus if bilirubin levels get too high. Early establishment of effective feeding helps prevent such high bilis. Our

job is to be sure babies get an early start with breastfeeding and are followed up until they are feeding well.

In 1975, when I was working as a postpartum nurse in another state, there was one pediatrician at my hospital who ordered routine formula supplements as a preventive measure for every breastfed baby because, as she put it, "breastfed babies all get jaundiced anyway." In 1997, 22 years later, the American Academy of Pediatrics has formally declared its support for exclusive breastfeeding starting from birth.⁴ I didn't agree with my colleague's approach a quarter-century ago, yet there was a grain of truth in what she said: we do know that there is a link between breastfeeding and jaundice.

Breastmilk Jaundice Affects Many Babies

All healthy newborns, whether breastfed or formula-fed, share certain characteristics which predispose them to develop physiologic jaundice. Bilirubin levels from normal physiologic jaundice generally peak at a level that is harmless to babies and decline after the first week. But in addition, more than two thirds of breastfed babies are visibly jaundiced in the second

and third weeks after birth. This condition, known as "breastmilk jaundice," results from human milk's ability to boost the absorption of intestinal contents—including some of the bilirubin which has already been processed by the baby's liver (conjugated) and prepared for excretion via the bowel. Simply put, the breastfed baby recycles bilirubin, which extends the length of normal jaundice beyond the one-week period of physiologic jaundice. In breastmilk jaundice the serum bilirubin usually stays below 12 mg/dL, but the jaundice can persist for as long as three months. One theory even suggests that bilirubin's antioxidant properties may have some protective value for the infant, but so far this theory has not been proved.⁵

Jaundice May Be Associated With Serious Problems

While physiologic jaundice and breast milk jaundice occur normally, some serious problems must also be considered. One is the possibility of pathological causes for high bilirubin. Jaundice is a symptom that requires careful assessment to rule out pathology such as sepsis, hemolysis, or a congenital liver defect. Another problem is to assess the individual baby's risk of bilirubin toxicity. A healthy full-term baby who is feeding well may tolerate a bili

level of 20, but even lower levels could be dangerous for a sick premature baby.

Exaggerated jaundice that develops in the first five days can also be a marker for a baby that is not yet breastfeeding effectively. To refer to this early jaundice “breastfeeding jaundice,” is actually a misnomer, as the typical baby with this problem is hardly “breastfeeding” at all. Good hospital care aims to prevent this “starvation jaundice” by assisting mothers and babies to make the most of every opportunity for breastfeeding. Nursing within an hour of birth, rooming in, teaching mothers to respond to all of baby’s cues, avoiding mother-baby separation, and encouraging skin-to-skin care are some simple ways to work toward the goal of 10-12 feeds per 24 hours.

Assessment Is Vital

A good assessment is crucially important, and it begins in pregnancy. Risk factors for lactation difficulty are *prior breast surgery, problems breastfeeding a previous baby, breast anomalies or glandular insufficiency, certain medications, tobacco smoking, or obesity*. Newborn risks include *prematurity, excessive resuscitation at delivery, anatomical or motor problems, weight loss over 7% of birth weight, or extreme sleepiness*. These conditions must be documented and reported when the patients move from prenatal to perinatal to mother/baby to post discharge care. Skilled observation, assessment, and

assistance are vital, although sometimes hard to provide in a busy hospital. Because many babies leave the hospital before breastfeeding is well established, the AAP Guidelines call for an early follow-up visit within 72 hours of discharge with a clinician who is skilled at assessing breastfeeding.

Jaundice, then, can be the end result of many different physical processes. Some processes are normal, such as physiologic jaundice and breastmilk jaundice. Some are not normal, such as pathologic jaundice and starvation jaundice. Jaundice from any cause or from a combination of causes has the potential to do harm. But this does not mean that we should give supplemental formula “just to be safe.” Instead, we need to focus on improving breastfeeding care. In the words of Dr. Larry Gartner, “exaggerated jaundice can be a warning sign that breastfeeding is not going well for the infant and for entire populations of newborns.”⁶

JCAHO Alert

The JCAHO Alert calls for improvements in four “root causes” of kernicterus that are related to patient care:

- a. inadequate patient assessment
- b. breaks in the continuum of care
- c. failure to educate families and to respond to their concerns
- d. lack of timely diagnosis and treatment

We could say the same about breastfeeding care, as it relates to jaundice.

- a. **We need to assess breastfeeding well.** We need to identify and follow women with risk factors and babies who are getting off to a slower start.
- b. Until they prove to us that they are feeding well, all breastfed babies should receive early follow-up and continued feeding assessment after discharge.
- c. Parents need to know how to assess feeding adequacy themselves. If parents have concerns about breastfeeding, they need access to skilled help at home or in the doctor’s office.
- d. We need to act promptly with babies who are not feeding effectively. If increased opportunity and better positioning and latch-on techniques don’t result in better milk transfer, moms can express their milk to feed the baby by an alternative method. Infant formula can be used temporarily if mom’s supply is low.

Jaundice in breastfeeding babies is not a reason to withdraw our support from breastfeeding. It is a call for us to support breastfeeding **better!**

(1) JCAHO, Sentinel Event Alert, Issue 18, April 2001. <http://www.jcaho.org/edu_pub/sealert/sea18.html>
 (2) Harris MC, JC Bernbaum, JR Polin, R Zimmerman, RA Polin, Developmental follow-up of breastfed term and near-term infants with marked hyperbilirubinemia. *Pediatrics* 107:1075-80, 2001.
 (3) Maisels MJ & E Kring, Length of stay, jaundice, and hospital readmission. *Pediatrics* 101:995-8, 1998.
 (4) AAP Work Group on Breastfeeding, Breastfeeding and the use of human milk. *Pediatrics* 100:1035-9, 1997.
 (5) Gartner LM & M Herschel, Jaundice and breastfeeding, in Schanler RJ (ed) Breastfeeding 2001, Part II: the management of breastfeeding. *The Pediatric Clinics of North America*, 48:2, 389-99, 2001.
 (6) *ibid* p 389.

Cooperative Sponsors Conference on Lead Poisoning Prevention

Childhood lead poisoning remains a major preventable environmental health problem across the nation. About a million children younger than 6 years of age in the United States have blood lead levels of at least 10 micrograms per deciliter (ug/dL), a level high enough to adversely affect intelligence, behavior, and development.

Mark your calendars for the upcoming **Update: Lead Poisoning Prevention** conference on October 10th at Cumberland County College Performing Arts Center in Vineland. This program focuses on ways to improve lead poisoning prevention by increasing awareness of community resources, lead screening programs, and new methods of treating lead poisoning with nutrition.

The conference is sponsored by the Southern New Jersey Perinatal Cooperative, Garden Area Health Education Center, the Interagency Task Force on Lead Poisoning Prevention, the Cumberland County College Health & Science Division Student Nurses Association, and the South Jersey Lead Consortium.

For more information or to register for the conference, call the Cooperative at (856) 665.6000 or visit the website at www.snjpc.org

The Expansion of Newborn Metabolic Screening in NJ

Newborn screening has become a prominent subject nationally as well as in New Jersey. Advances in screening technology now make it possible to test newborns for more conditions than ever before.

These advances have led to public advocacy and consumer interest in expanding the newborn metabolic screening program. It is important to remember that there is no national standard for newborn screening. Each state differs on the tests they mandate be performed.

Last April, the New Jersey Newborn Screening Advisory Panel convened to determine what, if any tests, needed to be added to the State's existing program -- this was five months before a federal government report requested that each state look at their current standards.

The New Jersey Newborn Screening Advisory Panel submitted its report to Acting Governor DiFrancesco calling for the addition of 10 more tests to be introduced over the next 10 months. The additional testing is expected to identify 60 to 70 more babies each year who will need follow-up care.

Early identification of these conditions is important for these infants to receive prompt, appropriate treatment, that can be lifesaving or prevent lifelong disabilities.

As of July 2001, New Jersey tests for the following medical conditions: PKU, hypothyroidism, galactosemia and Sickle Cell Disease, including other

hemoglobinopathies.

Under the expansion, testing for four new conditions began in July 2001:

- Biotinidase deficiency
- Congenital adrenal hyperplasia
- Cystic Fibrosis
- Maple Syrup Urine Disease

Testing for six additional conditions will begin in January 2002. Of these six, four are tests for fatty acid oxidation disorders:

- MCAD-- Medium Chain Acyl-CoA Dehydrogenase Deficiency
- SCAD -- Short Chain Acyl-CoA Dehydrogenase Deficiency
- LCAD--- Long Chain Acyl-CoA Dehydrogenase Deficiency
- VLCAD-- Very Long Chain Acyl-CoA Dehydrogenase Deficiency

The other two tests will diagnose urea cycle disorders:

- Argininosuccinic acidemia
- Citrullinemia

The NJ Department of Health and Human Services has allocated an additional \$3.2 million for this program. These funds are expected to be combined with the testing fee already paid by hospitals.

For more information on newborn screening in NJ, contact the NJ Department of Health & Senior Services at (609) 292-1582. For a full copy of the Advisory Committee's report on the internet, go to www.state.nj.us/health/fhs/nbs2000/report.htm.

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