Neonatal Mortality and Morbidity in Late Preterm Births


PICO*

Question: In patients born late preterm is there an increased risk of infant mortality or morbidity compared with infants born at term?

Question type: Prognosis

Study design: Retrospective cohort

A retrospective medical record review was performed by investigators from the University of Texas, Southwestern Medical Center to compare neonatal mortality and morbidity rates in late preterm infants (born between 34 and 36-6/7 weeks gestation) with that of infants born at term. Data were collected on 240,958 women and their infants who had prenatal care and delivered a liveborn singleton without malformations between January 1988 and December 2005 at Parkland Hospital, Dallas. Neonatal outcomes examined included death prior to 28 days, and common morbidities including respiratory distress syndrome, intraventricular hemorrhage, necrotizing enterocolitis, sepsis, and jaundice requiring phototherapy. The obstetric estimate of gestational age was used for the analysis.

During the study period, 21,771 births, or 9% of the total, were classified as late preterm. These late preterm births accounted for 76% of all preterm births. Approximately 80% of the late preterm births were due to idiopathic preterm labor or preterm rupture of membranes; the remaining 20% were due to maternal or fetal disorders. Maternal age, parity, and race or ethnicity were all significant predictors of gestational age at birth, but on logistic regression these variables did not affect the results. Late preterm neonatal mortality rates per 1,000 live births were 1.1, 1.5, and 0.5 at 34, 35, and 36 weeks, respectively, compared with 0.2 at 39 weeks (P<.001). Neonatal morbidity rates progressively and significantly decreased from 34 to 39 weeks gestation. One or more of seven measured morbidities (ventilator-treated respiratory distress, transient tachypnea, grades 1 or 2 intraventricular hemorrhage, sepsis evaluations, culture proven sepsis, and intubation in the delivery room) occurred in 14% of infants born at 39 weeks, compared with 34%, 24%, and 17% at 34, 35, and 36 weeks, respectively (P<.001 for each comparison). Rates of admission to the newborn intensive care unit (NICU), hospital length of stay, and hospital costs were all significantly higher in late preterm compared with term infants. Based on the significant morbidity and mortality seen in the studied population, the authors conclude that the health care focus on prematurity should be expanded to include the late preterm period.

Commentary by Eric C. Eichenwald, MD, FAAP

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Dr. Eichenwald has disclosed no financial relationship relevant to this commentary. This commentary does not contain a discussion of an unapproved/investigative use of a commercial product/device.

In 2005, a National Institute of Child Health and Development Workshop recommended changing the terminology used to refer to infants born at 34 to 36-6/7 weeks gestation from the then commonly used near-term to late preterm. Using the late preterm terminology for this population of infants helps raise awareness that they are still premature and hence medically vulnerable, rather than “almost term” which implies they are “almost mature.” This study adds to the accumulating evidence by demonstrating that late preterm infants have a significantly higher risk of mortality and morbidity compared with term infants.
late preterm labor. Reliable methods available to successfully treat and/or prevent to argue for prevention of this type of birth until we have safe and population. Although approximately 66% of late preterm births mature birth will need to be expanded to include this vulnerable cols for infants born late preterm, including those not admitted to develop different screening, treatment, and follow-up protocols for infants born late preterm, including those not admitted to the NICU.

Editors’ Note

Addressing the needs of late preterm infants is problematic because most interventions for premature infants have focused on infants <32 weeks gestational age. For example, despite widespread use of maternal corticosteroids in women in labor at <34 weeks gestation, the Cochrane Collaboration shows data from only two studies that would support the use of glucocorticoids in women delivering late preterm infants. Future studies on premature birth will need to be expanded to include this vulnerable population. Although approximately 66% of late preterm births in this study began labor spontaneously, it would be premature to argue for prevention of this type of birth until we have safe and reliable methods available to successfully treat and/or prevent late preterm labor.

References:

Dangers of Magnet Ingestions


Question: Among children who have swallowed magnets, what adverse outcomes have been reported?
Question type: Harm
Study design: Case report

Magnet pose a unique problem when more than one is ingested, due to their propensity to attract each other while residing in different loops of bowel. Dutta, et al report on a six-year-old boy who presented to the emergency department with a three-week history of abdominal pain that began after he had ingested several magnetic toys. After an abdominal radiograph revealed multiple radio-opaque objects throughout the abdomen, he underwent emergency exploratory laparotomy. A volvulus of the small bowel and four jejunal enteroenterotomies were discovered, caused by pressure necrosis from attracting magnets. Schierling, et al describe a four-year-old boy who ingested a tablet-shaped magnet from a toy set. A second ingestion of another magnet occurred the following day. After the magnets did not pass into the stool in 72 hours, the parents sought medical evaluation. Initially the patient had mild tenderness in the right lower quadrant and radiographs revealed two magnets adhering to each other in the right lower quadrant. Repeat radiographs five hours later showed the magnets had migrated medially instead of their expected course superior into the ascending colon. An exploratory laparoscopy revealed a fistula between the two pieces of bowel in which the two magnets resided, the result of pressure necrosis of the bowel mucosa caused by the attraction of the two magnets.

The authors conclude that early surgical intervention is essential in any child with a history of ingesting multiple magnets, especially in the presence of abdominal pain.

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Dr. Paul has disclosed no financial relationship relevant to this commentary. This commentary does not contain a discussion of an unapproved/investigative use of a commercial product/device.

The majority of ingested foreign bodies traverse the gastrointestinal system without complications. Surgical intervention is required infrequently but may be needed for items that are sharp (eg, sewing needles), toxic (eg, button batteries), or those that are too large to pass narrowed areas (eg, upper esophagus, gastroesophageal sphincter, pylorus, or ileocelecal valve). However, magnet ingestions represent unique challenges. A single small magnet should pose no problem and will most likely pass through the gastrointestinal system similarly to a small coin. However, multiple magnet ingestions can result in intestinal perforations or blockages. Significant morbidity following magnet ingestions has been reported. A series of 20 children, including one death, was published by the CDC in 2006.

In the past year and a half, the US Consumer Product Safety Commission (CPSC) has recalled 18 toy products in which magnets had become loose. Pediatricians need to be aware of the unique danger of magnet ingestions and the propensity for small magnets to become dislodged from toys. Medical evaluation, including abdominal radiographs, should be considered in patients with a history that suggests a small magnet may have
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