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Late preterm births associated with increased risk of respiratory illnesses

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An analysis of more than 200,000 deliveries finds that compared to infants born at full term, those born between 34 weeks and 37 weeks are more likely to have severe respiratory illness, and this risk decreases with each added week of gestational age during the late preterm period, according to a study in the July 28 issue of *JAMA*.

Late preterm birth (34 0/7 to 36 6/7 weeks' gestation) accounts for 9.1 percent of all deliveries and three-quarters of all preterm births in the United States. Considerable evidence suggests that short-term illnesses are prevalent; however, much of the supporting data for this evidence is more than a decade old or drawn from small populations, according to background information in the article.

Judith U. Hibbard, M.D., of the University of Illinois at Chicago, and colleagues of the National Institutes of Health's Consortium on Safe Labor, conducted a study to determine current rates of respiratory illness among late preterm births through analysis of recent data from a large group of late preterm infants. The study included collection of electronic data from 12 institutions (19 hospitals) across the United States on 233,844 deliveries between 2002 and 2008. Charts were abstracted for all neonates (newborns) with respiratory problems admitted to a neonatal intensive care unit (NICU), and late preterm births were compared with term births in regard to resuscitation, respiratory support, and respiratory diagnoses.

Of 19,334 late preterm births, 7,055 (36.5 percent) were admitted to a

NICU and 2,032 had respiratory compromise. Of 165,993 term infants, 11,980 (7.2 percent) were admitted to a NICU, 1,874 with respiratory illness. The researchers found that respiratory distress syndrome (RDS; an acute lung disease of the newborn) was the most common respiratory illness, occurring in 10.5 percent (n = 390) of 34-week deliveries, decreasing with gestational age to 0.3 percent (n = 140/41,764) at 38 weeks. Transient tachypnea (rapid breathing) of the newborn was the second most common morbidity at 6.4 percent (n = 236) at 34 weeks, reaching a low of 0.3 percent (n = 207/ 62,295) at 39 weeks. Also decreasing from 34 weeks were pneumonia, from 1.5 percent to 0.1 percent at 39 weeks and overall respiratory failure, from 1.6 percent to 0.09 percent at 40 weeks. The percentage of infants with various respiratory illnesses decreased significantly as gestational age increased until 39-40 weeks.

Additional analysis found that for neonates born at 34 weeks, the odds of RDS were increased 40-fold and that risk decreased with each advancing week of gestation until 38 weeks. "Even at 37 weeks, the odds of RDS were still 3-fold greater than that of a 39- or 40-week birth. Similar patterns were seen for transient tachypnea of the newborn, pneumonia, standard or high-frequency ventilator requirements, and respiratory failure," the authors write.

"We suggest that future studies should focus on indications for late preterm birth. Only by more completely understanding reasons for rising rates of late preterm birth might clinicians be able to initiate salutary interventions to decrease neonatal respiratory morbidity. Improved pregnancy dating through early ultrasound confirmation of estimated due date may help prevent neonatal morbidity associated with erroneous delivery of a neonate that is actually at an earlier gestational age. Finally, a better understanding of the effect of mode of delivery on neonates may help with future interventions to decrease morbidity," the researchers conclude.

More information: JAMA. 2010;304[4]:419-425.