

Using steroids before late preterm delivery reduces neonatal respiratory problems

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A multicenter clinical trial led by researchers at Columbia University Medical Center (CUMC) and NewYork-Presbyterian has found that the use of corticosteroids in mothers at risk for late preterm delivery significantly reduced the incidence of severe respiratory complications in their babies.

"Our study demonstrates that administering a medication that is commonly used to prevent complications in babies born before 34 weeks of gestation can also reduce the risk of many serious complications in babies delivered just a few weeks before term," said Cynthia Gyamfi-Bannerman, MD, MSc, the Ellen Jacobson Levine and Eugene Jacobson Associate Professor of Women's Health (in Obstetrics and Gynecology) at CUMC, obstetrician and maternal-fetal medicine specialist at NewYork-Presbyterian and lead investigator of the study. "This will transform the way we care for mothers at risk for late preterm delivery."

The study was published today in *New England Journal of Medicine*.

Since the early 1990s, corticosteroids have been widely used in mothers at risk of delivering before 34 weeks of gestation. This treatment accelerates the development of the baby's lungs, so that once born, the baby is better able to clear fluid and absorb oxygen. At the time, researchers believed that corticosteroids were unnecessary for later preterm births because 99 percent of babies born after 34 to 35 weeks survive. However, it is now clear that infants born during the 'late' preterm period (between 34 and 36 weeks) have increased neonatal and childhood respiratory complications compared with newborns born at term (37 weeks or later).

The new study enrolled more than 2,800 pregnant women deemed at high risk of delivery during the late preterm period (34-36 weeks of gestation). The women were randomized to receive two injections of the steroid betamethasone or a

placebo, given 24 hours apart.

The study found that babies whose mothers received betamethasone had a significantly lower rate of severe [respiratory complications](#) shortly after birth compared with those whose mothers were given a placebo. In particular, neonates from the treatment group had significantly lower rates of bronchopulmonary dysplasia, a lung condition of newborns that increases the risk of chronic lung disease during childhood.

The study also found that babies in the treatment group were significantly less likely to require a long-term stay in the hospital's neonatal intensive or intermediate care unit or need respiratory treatments such as surfactant.

Approximately 8 percent, or more than 300,000 babies, are born in the late preterm period each year. Of those, roughly 12 percent need persistent respiratory support or have other serious complications requiring prolonged stays in a special care nursery.

"While survival among late preterm infants is comparable to that of babies born at term, the rate of respiratory problems and other serious complications in this group is not comparable and remains unacceptably high," said Dr. Gyamfi-Bannerman. "Expanding the use of a well-studied, safe medication to improve lung development before birth offers a means of preventing many of these complications."

Neonates with severe respiratory problems are at higher risk for long-term complications, such as [chronic lung disease](#) and neurodevelopmental problems, throughout infancy and childhood. The investigators plan to conduct further studies to determine if giving corticosteroids to mothers at risk for late preterm delivery ameliorates their children's risk of long-term health problems.

Provided by Columbia University Medical Center

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