Betamethasone Dosing at 12 Hours is Beneficial in Preterm Birth

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Research has shown that glucocorticoid administration has a significant beneficial effect for preterm births, as it decreases the incidence of respiratory distress syndrome in infants delivered between 24 weeks and 34 weeks gestation, reduces the incidence of intraventricular hemorrhage, improves circulatory stability in premature infants, reduces the need for oxygen and ventilatory support, and reduces overall neonatal mortality.

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To better understand the importance of administering betamethasone 24 hours versus 12 hours apart, Dr. Meena Khandelwal, from the department of obstetrics and gynecology at Cooper University Hospital in Camden, New Jersey and the University of Medicine and Dentistry of New Jersey, and colleagues conducted a prospective, randomized, semi-blinded noninferiority study comparing the two treatment regimens. Women at risk for preterm delivery who were between gestational age of 23 weeks and 34 weeks were randomized to receive the standard two doses of betamethasone either 12 hours (N=140) or 24 hours (N=70) apart. Gravidity, parity, race, and body mass index were similar across the two treatment groups.

Khandelwal and colleagues found that most outcomes were similar in the 12-hour and 24-hour-interval cohorts. Specifically, incidence of respiratory distress syndrome was 36.5% and 37.3% for the 12-hour and 24-hour intervals, respectively. However, Khandelwal et al. also noted increased, although minimal, adverse events associated with the 12-hour interval. For instance, an increased incidence of necrotizing enterocolitis was found in the group receiving the 12-hour regimen (6.2%) as compared to those receiving the 24-hour regimen (0%).

“The 12-hour dosing interval is equivalent to the 24-hour dosing interval for prevention of RDS [respiratory distress syndrome] in neonates of mothers delivering prematurely,” the authors explained. However, they cautioned, “Despite equivalence in beneficial effects of the 12-hour dosing interval, safety of this regimen has not been established.”

Based on their findings, Khandelwal and colleagues believe the 12-hour dosing regimen might hold great promise for women. For women who deliver within 24 hours of presentation, for example, the 12-hour dosing schedule has a great advantage. However, since this is the first randomized prospective study looking at the two dosing intervals, the researcher noted subsequent studies are needed.

References:
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