



What is the optimal interval between administration of antenatal corticosteroids and preterm delivery?

NO MORE THAN 7 DAYS, according to this retrospective review of 254 preterm (<34 weeks) births. Infants delivered more than 7 days after administration of antenatal corticosteroids had a higher risk of intubation for respiratory morbidity.

Wilms FF, Vis JY, Pattinaja DAPM, et al. Relationship between the time interval from antenatal corticosteroid administration until preterm birth and the occurrence of respiratory morbidity. Am J Obstet Gynecol. 2011;205(1):49.e1-7.

► **EXPERT COMMENTARY**

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In the early 1970s, as a direct by-product of basic science research on preterm birth using a sheep model, Liggins and Howie discovered that the administration of corticosteroids to women facing impending preterm birth could lower the risk not only of respiratory morbidity but also of intraventricular hemorrhage, necrotizing colitis, and death for their newborns. This discovery was confirmed in other clinical trials, and the novel strategy of a secondary therapy to reduce the sequelae of preterm birth became part of standard perinatal care. Despite this advance, numerous questions remain, including the proper dosing interval and number of doses of corticosteroids necessary to prevent the sequelae of preterm birth.

Authors explored births before 34 weeks' gestation

To elucidate the proper dosing interval, Wilms and colleagues conducted a retrospective cohort study among women who received

antenatal corticosteroids and delivered before 34 weeks' gestation. Of the 254 infants who were delivered prematurely, those delivered within 7 days of the administration of corticosteroids had a reduced risk of requiring intervention in the NICU. The authors concluded that the efficacy of antenatal corticosteroids diminishes when the treatment-to-delivery interval exceeds 7 days.

Limitations of the study

The investigators admonish readers to carefully consider the timing of the first dose of corticosteroid therapy. Their conclusions are limited by **1)** the retrospective nature of their research and **2)** the fact that clinicians who cared for newborns in this study were aware of the timing of maternal corticosteroid administration.

Nevertheless, clinicians can draw pertinent points for day-to-day practice:

WHAT THIS EVIDENCE MEANS FOR PRACTICE

In women who are given antenatal corticosteroids for impending preterm birth, pay attention to the interval between administration and delivery. In this study, an interval of 7 days or less was associated with a reduced need for intervention in the NICU.

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FAST TRACK

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- The window of benefit seems to be time-limited, with a break-point and diminution at 7 days after administration of corticosteroids
- A second dose of antenatal corticosteroids may be of benefit in selected situations.

Repetitive dosing beyond two rounds 1 week apart appears to have no benefit, according to clinical trials of weekly versus one-time dosing. Moreover, repetitive dosing causes small but significant decrements

in birth weight and head circumference. Whether these changes are associated with long-term harm remains unknown.

Other authors have drawn similar conclusions—but we need prospective randomized, controlled trials to clarify the issue of whether to repeat corticosteroid administration and, if so, how many doses are optimal and how often they should be given. 🚫