

Very premature babies benefit most from corticosteroids before birth

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Giving corticosteroid drugs to mothers at risk of preterm delivery - from as early as 23 weeks of pregnancy - is associated with a lower rate of death and serious illness for their babies, finds a study published by *The BMJ* today.

Very premature babies seem to benefit the most, even those born at 23 weeks, the findings show.

Babies born early carry a greater risk of death and serious complications after birth such as breathing problems, bleeding into the brain or infection, compared with [babies](#) born at term. These problems tend to be more severe the earlier the baby is born.

Corticosteroids have been shown to help with a baby's development and therefore increase the chance of the baby surviving, once born.

Current guidelines recommend giving corticosteroids to at risk women from 23 to 34 weeks of pregnancy (gestation). However, the benefits for reducing ill health (morbidity) during the 23rd week had been less clear.

So a team of US researchers analysed data for 117,941 infants born between 23 and 34 weeks of gestation from 2009 to 2013 at 300 [neonatal intensive care](#) units across the United States.

Death or major illness was analysed by gestational age and [exposure to antenatal corticosteroids](#), adjusting for factors such as birth weight, sex, mode of delivery and multiple births.

The researchers found that exposure to antenatal corticosteroids was associated with a significantly lower rate of death before discharge from hospital at each gestation compared with infants without exposure.

They also found that the number of infants needed to treat with antenatal corticosteroids to prevent

one death before discharge increased from six at 23 and 24 weeks of gestation to 798 at 34 weeks of gestation, suggesting that infants born at the lowest gestational ages benefit most, even those born at 23 weeks.

The rate of survival without major illness while in hospital was also higher among infants exposed to antenatal corticosteroids at the lowest gestations.

"Among infants born from 23 to 34 weeks' gestation, antenatal exposure to corticosteroids compared with no exposure was associated with lower mortality and morbidity at most gestations," say the authors.

"This study highlights for the first time that infants at the lowest gestations seem to benefit the most from exposure to antenatal corticosteroids," they add.

The authors point out that this is an observational study, so no firm conclusions can be drawn about cause and effect, and they outline some limitations could have introduced bias.

Nevertheless, they conclude that this study "supports the administration of antenatal corticosteroids in women with threatened preterm labour from 23 to 34 weeks' gestation."

In a linked editorial, Professor Sarah McDonald at McMaster University in Canada agrees that the administration of antenatal corticosteroids to women at risk of early preterm birth "has been one of the most effective interventions to improve premature [infants'](#) outcomes."

However, she points out that that timing is critical to maximising benefits for very [premature babies](#). Ideally [corticosteroids](#) should be administered within approximately one week of birth, she explains, and this remains the biggest challenge for clinicians.

More information: Exposure to any antenatal corticosteroids and outcomes in preterm infants by gestational age: prospective cohort study, www.bmj.com/content/356/bmj.j1039

Editorial: Antenatal corticosteroids for women at risk of preterm delivery, www.bmj.com/content/356/bmj.j1467

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