

Corticosteroid treatment increases survival of preterm infants within hours

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The effects of corticosteroid treatments on pregnant women facing preterm delivery to prevent infant death and morbidity have been thought to develop gradually over days. However, a new study by researchers at Karolinska Institutet and colleagues in the European EPICE project - coordinated by Inserm, Paris - suggests that survival and health gains for very preterm infants may occur within hours.

Hundreds of thousands of [pregnant women](#) in Europe deliver preterm every year. Even if survival nowadays is the most probable outcome, [preterm birth](#) is still one of the major causes of death in children under the age of 5. To prepare the foetus for breathing air and increase chances of survival after birth, [corticosteroid](#) treatment is given to pregnant [women](#) at risk of preterm delivery. So far, the protective effect of corticosteroids before birth has been thought to develop gradually over days. A large European study—published in *JAMA Pediatrics*—provides new knowledge, however, indicating an immediate effect.

"Our study finds that antenatal (before birth) corticosteroids given to pregnant women only hours before delivery were associated with a survival advantage for their infants", says Mikael Norman, lead author, neonatologist and professor at Karolinska Institutet's Department of Clinical Science, Intervention and Technology in Stockholm, Sweden.

Mikael Norman and colleagues on the EPICE (Effective Perinatal Intensive Care in Europe) research project have studied outcomes in over 4,500 very [preterm infants](#), born at 24 to 31 weeks of gestation

(excluding multiple pregnancies and severe congenital malformations) in 11 countries across Europe. In this cohort, 15 per cent of the pregnant women were not exposed to [antenatal corticosteroids](#). 21 per cent of the unexposed infants died after birth.

Infants born already 3 hours after corticosteroid administration to the mother had significantly lower mortality than those not exposed to the treatment, and corticosteroid administration 6 to 12 hours before birth was associated with halved risks of infant death.

"Given the current concept of a slow effect, pregnant women at immediate risk of [preterm delivery](#) may not receive corticosteroid treatment because it is considered futile", says Dr Norman. "Also our results can provide reassurance for clinicians or parents in situations where it is not possible to wait a day or two to reach the full effect of corticosteroid treatment because of the need for action to reduce or stop ongoing morbidity in the pregnant woman and her foetus", he continues.

In the study, antenatal corticosteroid treatment was also associated with a lower risk of severe neonatal morbidity such as bleedings in the brain. This reduction in the risk was associated with longer administration-to-birth intervals.

"Our findings challenge current beliefs that very short exposures to antenatal steroids before delivery have no effect, and suggest that encouraging the administration of antenatal corticosteroids to pregnant women when delivery is very imminent could result in substantial survival and health gains for very preterm [infants](#)" says Jennifer Zeitlin, principal investigator of the EPICE study and researcher at Inserm (French National Institute of Health and Medical Research), Paris, France.

More information: "Association of short antenatal corticosteroid

administration-to-birth intervals with survival and morbidity in very preterm infants - results from the EPICE cohort". *JAMA Pediatrics* (2017). [DOI: 10.1001/jamapediatrics.2017.0602](https://doi.org/10.1001/jamapediatrics.2017.0602)

Provided by Karolinska Institutet

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