Postterm pregnancies: A population-based study of markers of potential long-term neurodevelopmental morbidity and other adverse infant outcomes in Washington State

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Objective: We compared the occurrence of selected conditions that may be markers of long-term neurodevelopmental morbidity (neonatal seizures, 5-minute Apgar score <4, meconium aspiration syndrome, hypoxic ischemic encephalopathy/perinatal asphyxia, and neonatal acidemia) and of other selected frequently reported adverse outcomes between infants delivered postterm and those delivered at term.

Methods: This was a population-based, retrospective cohort study using linked birth-hospital discharge records for singleton live births in Washington State from 2003 to 2008. Study subjects consisted of 89,183 term (38-41 weeks gestation) and 29,677 postterm (42-45 weeks gestation) infants. Relative risks and 95% confidence intervals were estimated using Mantel-Haenszel stratified analysis to compare the risks of selected outcomes between term and postterm infants.

Results: Compared with term infants, postterm infants had a significantly higher risk of meconium aspiration syndrome and non-significant increased risks of the other potential markers of long-term neurodevelopmental morbidity. Macrosomia, low birth weight, 5-minute Apgar score <7, meconium staining, neonatal intensive care unit admission, birth hospitalization >5 days, and primary cesarean delivery also occurred significantly more frequently in postterm births relative to term births.

Conclusions: Postterm infants in Washington State had a strong association with meconium aspiration syndrome and non-significant increased risks of neonatal seizures, 5-minute Apgar score <4, hypoxic ischemic encephalopathy/perinatal asphyxia, and neonatal acidemia. We also confirmed the increased risk of other adverse infant outcomes among postterm infants. With the exception of meconium aspiration syndrome, the associations between postterm birth and the potential markers of long-term neurodevelopmental morbidity did not reach significance. However, this does not exclude the possibility that postterm delivery is a risk factor for developmental disorders later in life. Further research using longitudinal data sources should be conducted in the future to investigate the association between postterm birth and long-term neurodevelopmental morbidity.

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