

Association of Maternal Smoking During Pregnancy With Infant Hospitalization and Mortality Due to Infectious Diseases

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Background: Maternal smoking is associated with infant respiratory infections and with increased risk of low birth weight infants and preterm birth. This study assesses the association of maternal smoking during pregnancy with both respiratory and nonrespiratory infectious disease (ID) morbidity and mortality in infants.

Methods: We conducted 2 retrospective case-control analyses of infants born in Washington State from 1987 to 2004 using linked birth certificate, death certificate and hospital discharge records. One assessed morbidity—infants hospitalized due to IDs within 1 year of birth (47,404 cases/48,233 controls). The second assessed mortality—infants who died within 1 year due to IDs (627 cases/2730 controls).

Results: Maternal smoking was associated with both hospitalization (adjusted odds ratio [AOR] = 1.52; 95% confidence interval [CI]: 1.46, 1.58) and mortality (AOR = 1.51; 95% CI: 1.17, 1.96) due to any ID. In subgroup analyses, maternal smoking was associated with hospitalization due to a broad range of IDs including both respiratory (AOR = 1.69; 95% CI: 1.63, 1.76) and nonrespiratory IDs (AOR = 1.27; 95% CI: 1.20, 1.34). Further stratification by birth weight and gestational age did not appreciably change these estimates. In contrast, there was no association of maternal smoking with ID infant mortality when only low birth weight infants were considered.

Conclusions: Maternal smoking was associated with a broad range of both respiratory and nonrespiratory ID outcomes. Despite attenuation of the mortality association among low birth weight infants, ID hospitalization was found to be independent of both birth weight and gestational age. These findings suggest that full-term infants of normal weight whose mothers smoked may suffer an increased risk of serious ID morbidity and mortality.

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