

Early Childhood Respiratory Morbidity and Health Services Utilization in Children Born Preterm or Small and Large for Gestational Age

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Introduction

Alterations in duration of gestation and fetal growth such as preterm birth (PTB) or small and large for gestational age (SGA, LGA) have long-term consequences on respiratory health. The risk of health services use for respiratory conditions in infants born PTB, SGA or LGA in Canada needs to be evaluated.

Objectives and Approach

We evaluated the association between PTB, SGA and LGA and health services utilization for respiratory diseases in early childhood. We linked three administrative health databases to identify all singleton live births in Alberta between 2005-2010. We obtained data on the number of hospital admissions and emergency department (ED) visits in the first five years of life for acute upper respiratory infections, acute lower respiratory infections, wheezing disorders, bronchopulmonary dysplasia, and influenza and pneumonia. Odds ratios (OR) of health services use for PTB, SGA, LGA were calculated adjusting for important covariates (e.g., maternal age, sex, socioeconomic status, total antepartum risk score).

Results

The cohort contained 206,994 infants of whom 9.1% were PTB, 8.5% were SGA and 9.4% were LGA. Babies born prematurely (PTB) were more likely to have a respiratory disease in the first five years of life than babies experienced fetal growth alterations (SGA or LGA). PTB increased significantly the odds of acute lower respiratory infections by 30 to 90%, of wheezing disorders by 40 to 70%, of influenza and pneumonia by 30 to 60%, and of acute upper respiratory infections by 10 to 50%. By contrast, SGA increased the odds of bronchopulmonary dysplasia by 3 to 300%, and LGA increased the odds of acute upper respiratory infections by 11 to 18% and of acute lower respiratory infections by 8 to 11%.

Conclusion/Implications

Prematurity and alterations in fetal growth are associated with increased hospital and ED admissions in early childhood. The patterns differ for PTB, SGA, and LGA. Linkage of administrative health data provides useful epidemiological evidence to inform the burden of early childhood respiratory diseases resulting from adverse birth outcomes.

