We thank Dr. Dórea for his interest in our article (1). The objective of our study was to identify the independent effects of 47 potential predictors, measured during pregnancy and after birth, on the incidence of childhood asthma (2). As we acknowledged in the Discussion section of our paper, despite the extent of the data collection efforts and the fact that 47 potential determinants were considered in the analyses, information on some potential risk factors was not available and thus those factors could not be evaluated.

As Dr. Dórea highlighted (1), variations in vaccine formulation and immunization schedules have been seen over time in Quebec (3). We agree that the effect of vaccines and their constituents would have been interesting to evaluate. However, immunization programs in Quebec allow children to receive a certain number of vaccines free of charge, and these programs are not covered through the same mechanism as prescribed medications or medical services. Therefore, this information was not captured in the databases used in our study, thereby preventing investigation of the effect of individual or combined vaccines or the presence of thimerosal as a potential determinant of childhood asthma.

The study of the incidence of disease over various periods of time could be used as a strategy to evaluate the influence of thimerosal, which was present in the vaccines during a precise time period, on the risk of childhood asthma. However, this would need to be assessed in an ecologic manner, and there is a possibility that the effect of the studied variable
could be confounded by the effects of other variables that changed over time and that may also affect the risk of childhood asthma. In the present case, the medication insurance coverage had been modified in 1997, and new guidelines for the management of asthma were issued that same year (4). As a result, it may be difficult to precisely distinguish the effect of these factors from the effect of thimerosal-free immunizations that were introduced in 1996.

As Fombonne et al. (3) mentioned, vaccine coverage has traditionally been very good in Quebec. In fact, a recent survey conducted in Quebec in 2006 found that 1.2% of children in a 1-year-old cohort had not receive any vaccines, whereas this proportion was 2.7% in the 2-year-old cohort (5). The report indicated that 87.8% of children in the 1-year-old cohort had received all vaccines recommended for the first year of life; this proportion was 85% in 2-year-old children for all vaccines recommended for the first 24 months of life (5).

On the basis of these numbers, it is likely that a very high proportion of children considered in the cohort born to asthmatic and nonasthmatic mothers were exposed to vaccines, thereby limiting our ability to study the effect of this variable (very few unexposed children) and also reducing the risk that this variable could have confounded the results.

ACKNOWLEDGMENTS

Conflict of interest: none declared.

REFERENCES


Marie-Josée Martel1, Évelyne Rey2, Jean-Luc Malo3, Sylvie Perreault1, Marie-France Beauchesne1,4, Amélie Forget1, and Lucie Blais1,3 (e-mail: lucie.blais@umontreal.ca)  
1 Faculty of Pharmacy, Université de Montréal, Montréal, Quebec, Canada  
2 Department of Obstetrics and Gynaecology, Centre Hospitalier Universitaire Sainte-Justine, Montréal, Quebec, Canada  
3 Research Center, Hôpital du Sacré-Cœur de Montréal, Montréal, Quebec, Canada  
4 Pharmacy Department, Hôpital du Sacré-Cœur de Montréal, Montréal, Quebec, Canada

DOI: 10.1093/aje/kwp111; Advance Access publication May 14, 2009