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The association between maternal and offspring preterm birth. Results from a sibling design

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Introduction

Previous studies have reported an intergenerational association between maternal and offspring preterm birth (PTB) but the nature of the association remains unclear.

ever delivered a preterm baby. Consideration of family history of PTB may better identify women-at-risk.

Objectives and Approach

The objective was to revisit the association between maternal and offspring preterm birth using a quasi-experimental sibling design and distinguishing between preterm birth types. We conducted a retrospective intergenerational cohort study of 39,573 women born singleton in Manitoba, Canada (1980-2002) who gave birth to 79,198 singleton infants (1995-2016). To account for familial confounding we defined a matched sub-cohort of 1033 sister mothers with discordant PTB status and compared offspring PTB rates between 2,499 differentially exposed cousins using log-binomial fixed-effects generalized estimating equation models. PTB was defined as a delivery < 37 gestation weeks, divided into spontaneous and provider-initiated.

Results

In the population, mothers born preterm were more likely to give birth preterm [Adjusted Relative Risk (ARR): 1.39; 95% Confidence Interval (CI): 1.25, 1.54]. The intergenerational association was not apparent among births to sisters with discordant PTB status [ARR: 1.02; 95% CI: 0.77, 1.34]. However, the lack of association in the sibling analyses is explained by the fact that infants whose maternal aunts, but not their mothers, were born preterm had similarly elevated risk of PTB (10%) than infants whose mothers were born preterm. Intergenerational patterns were observed for spontaneous PTB but not for provider-initiated PTB.

Conclusion/Implications

These findings suggest that it is not the fact of having been born preterm that puts women at higher risk of delivering preterm, but the fact of having been born to a mother who

