

CHRD 2024: Abstract Submission Form

Presenter Name

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Presenter Status

PhD Student

Role in the project

Design

Analyze Data

Write Abstract

Research Category

Clinical

Title

Exposure to gestational diabetes and hypertension in offspring: A triangulation approach

Background

Exposure to gestational diabetes is associated with increased risk for cardiovascular morbidity including youth-onset hypertension.

Objective

The purpose of this study is to triangulate findings from three different studies with varying strengths and limitations to investigate whether the association is caused by an in-utero mechanism.

Methods

This study leveraged administrative health data from 418,169 singleton born offspring from 224,963 families in Manitoba, Canada. Gestational diabetes and youth-onset hypertension were determined using ICD codes and validated algorithms. We conducted three complimentary analyses. First, we compared rates of hypertension between offspring exposed to gestational diabetes and controls that were exact-matched on confounders including birthyear, socioeconomic index, maternal age, parity, residence, and health region using a Poisson model with person-years of the denominator as an offset. Second, we repeated the same analysis using paternal type 2 diabetes status as the exposure in a negative control design. Lastly, we compared the incidence of hypertension between siblings discordant for gestational diabetes exposure.

Results

Between unrelated families, risk of hypertension was 35% higher in gestational diabetes exposed vs unexposed offspring (IRR:1.35, 95%CI: 1.19,1.54). After matching on covariates (n=11,612), there was a similar increased risk of hypertension among exposed offspring (IRR:1.41, 95%CI: 1.16,1.72). Among all paternal-offspring pairs (n=145,318), hypertension risk was 1.7-fold higher for offspring whose fathers lived with diabetes (IRR:1.70, 95% CI: 1.28, 2.27). The sample was considerably smaller after matching (n=2,022); however, the effect size remained similar, though it was less precise (IRR:1.50, 95%CI: 0.96,2.24). There was no difference in risk for hypertension among sibling-pairs discordant for gestational diabetes exposure (n=12,204; IRR:1.01, 95%CI: 0.83,1.21).

Conclusion

Collectively, these findings suggest that previously documented associations between exposure to gestational diabetes and increased risk of offspring hypertension may be due to family-based confounding rather than a direct in-utero mechanism.

Do you have a table/figure to upload?

No

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