

ABSTRACT SUBMISSION FORM

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SEX + GENDER

Exploring the role of sex and gender on health research



CHR D 2020: Abstract Submission Form

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Title

The association of albuminuria in youth with type 2 diabetes with in-utero type 2 diabetes exposure is not mediated through altered renal volume

Background

Type 2 diabetes (T2D) diagnosed in youth is associated with early renal complications.

Objective

We tested the hypothesis that in utero maternal diabetes exposure impacts the developing nephron mass resulting in smaller renal volume and early renal dysfunction.

Methods

We performed a cross-sectional study of renal volume and albuminuria (urine albumin: creatinine ratio $\geq 3\text{mg}/\text{mmol}$) in 300 youth with T2D exposed in utero to normoglycemia ($n=122$), gestational diabetes (GDM) ($n=57$) and T2D ($n=121$). Independent effects of maternal diabetes status on renal volume, and albuminuria were determined by regression analysis. Causal mediation analysis was performed to assess if the effect of maternal diabetes status on albuminuria was mediated through renal volume.

Results

Of the youth (mean age 14 yrs) with T2D, 68% were female, 31% had albuminuria, and 42% had hypertension. Maternal diabetes status was not associated with renal volume for either GDM ($p=0.47$) or T2D ($p=0.31$) exposure. After adjustment for maternal diabetes status renal volume was a significant predictor of albuminuria (OR 1.05, $p=0.002$). Only the direct effect of maternal T2D was significantly associated with albuminuria (OR 1.94, 95% CI 1.00-3.80) in causal mediation analysis.

Conclusion

Youth with T2D have high rates albuminuria. Both exposure to maternal T2D and renal volume were associated with albuminuria in offspring with T2D however, maternal diabetes status was not associated with renal volume. The effects of maternal T2D exposure and renal volume on the presence of albuminuria

in youth with T2D are independent suggesting different mechanistic pathways in the progression of early renal damage.

Theme:
Clinical

Do you have a table/figure to upload?
No

Are you willing to participate in Goodbear's Den?
No

Presenter Status:
Non-Trainee

What was your role in the project?
Design

Authors

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