Cardiovascular Risk Factors in Youth with Type 1 Diabetes in Western Australia

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Introduction
- In Western Australia (WA), type 1 diabetes (T1D) incidence has been increasing by about 2-3% per year
- Cardiovascular disease (CVD) is a main cause of morbidity and mortality in T1D
- Early emergence of known later-onset CVD risk factors in T1D youth could inform future prevention strategies

Objective of the Study
To investigate the association between characteristics at onset of T1D youth diagnosed <15 years in WA and the early emergence of known later-onset CVD risk factors within 5 years of diagnosis

Methods
- Study cohort: T1D youth diagnosed <15 years in WA from 1999-2014 with at least 5 years of follow-up data
- Analyzed demographic and clinical data obtained from the Western Australian Children’s Diabetes Database (WACDD) from T1D diagnosis to 5 years follow-up
- Used logistic regression models to identify independent predictors of the early emergence of known risk factors for later-onset CVD

Research Context

T1D Diagnosis

Outcomes of Interest (Known CVD Risk Factors):
- BMI (Overweight/Obesity)
- BP (Pre-hypertension/Hypertension)
- Lipids (Dyslipidemia)
- HbA1c (High)
- Microalbuminuria (Positive)

CVD-Related Morbidity and/or Mortality

0-5 Years After Diagnosis

Demographic and Clinical Variables at Onset (obtained from WACDD):
- Year of Diagnosis
- Age at Diagnosis
- Sex
- Postcode at Diagnosis (SEIFA/SES, Area)
- BMI (3-6 months post-diagnosis)

Results
- Models were conducted by outcome of interest (i.e. known CVD risk factor)
- Number of cases identified from WACDD vary by outcome due to criteria (i.e. at least 15 measurements by outcome)
- To examine the association of interest, adjusted odds ratios (with associated 95% confidence interval (CI) and probability value (p-value)) indicate the likelihood of a variable at onset (i.e. predictor) to independently predict the likelihood of presenting with an outcome of interest at least once during the 5-year period following diagnosis
- Adjusted odds ratios deemed statistically significant if p-value < 0.05

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Conclusion
For youth with T1D, demographic and clinical characteristics at onset might independently predict the likelihood of the early emergence of known risk factors for later-onset CVD

Future Questions
- Assess known later-onset CVD risk factors over time
- Extend analysis time to further evaluate risk factor trajectories in later stages of youth and adulthood
- Consider other factors at onset (e.g. drug use, family structure) and their potential association with known later-onset CVD risk factors

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