The association between Type 1, Type 2 and Gestational Diabetes and Age at Natural Menopause: results from the Canadian Longitudinal Study on Aging

Vrati Mehra

Background: With increased prevalence across all age groups and growing incidence of youth-onset diabetes, more women are expected to spend a greater portion of their reproductive years with diabetes. However, little is known about the long-term implications of premenopausal diabetes, especially gestational diabetes, on women’s reproductive health. The objective of this study then is to understand the association between different types of diabetes (Type 1, Type 2 and Gestational) and Age at Natural Menopause (ANM).

Methods: Baseline data from the comprehensive cohort of the Canadian Longitudinal Study on Aging (CLSA) will be utilized for this study. Those reporting pre-menopausal diagnosis of diabetes will be considered as having diabetes and will then be further divided into Type 1, Type 2, Gestational and Borderline Diabetics. The primary end-point of this study will be the occurrence of natural menopause. Socio-demographic, substance use and health related variables will be included in the analysis as covariates along with a wide range of pre-menopausal health conditions such as cardiovascular diseases (including stroke, mini-stroke angina and heart attack), hypertension, depression, corticosteroid use, osteoporosis, hypothyroidism and hyperthyroidism. Kaplan-Meier cumulative survivorship estimates will be used to assess the timing of natural menopause among different types of diabetes. Cox proportional hazards regression model will then be used to estimate multivariate hazard ratios (HRs) and 95% CIs for associations between diabetes and ANM.

Significance: Understanding the long term implications of diabetes on women’s reproductive aging can help clinicians in Canada and around the world direct early and focussed care towards at-risk patients.