

Assessing the association of early menarche on preterm birth: a prospective cohort study

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Background

Preterm birth (PTB), occurs in about 5-10% of pregnancies worldwide, and is the main cause of perinatal mortality and morbidity in industrialized countries, where 60-80% of deaths in infants are related to PTB. Menarche, or the age at first menstrual period, has been identified as an indication of puberty that can help determine future obstetrical history. The effects of the age of menarche have been studied across the globe, with early menarche linked to poor pregnancy outcomes including low birth weight, spontaneous abortions, and ectopic pregnancies. To date there has only been limited, mixed evidence supporting an association between early menarche and PTB. Therefore, the purpose of this study is to investigate the association between early menarche and risk of PTB.

Methodology

Secondary data analysis will be conducted using the Ontario Birth Study (OBS), a prospective pregnancy-based cohort study housed at Mount Sinai Hospital (MSH), in Toronto. PTB will be defined as neonatal delivery at 20 weeks' gestation (140 days) up to and including 36 weeks and 6 days' at gestation (258 days). Age at menarche will be assessed by the following question from the questionnaire "How old were you when you had your first menstrual period?" Age at menarche will be defined as 1 standard deviation lower than the mean age at menarche in the study sample and will be categorized as a dichotomous variable. Covariates including maternal demographics, health factors, and pregnancy related conditions will be included in the analysis. Summary statistics and bivariable associations between preterm birth and early menarche will be conducted using chi-square tests. Multivariable logistic regression will be conducted to assess the effect of early menarche on risk of PTB, adjusting for all covariates.

Significance

Results of this study are anticipated to add to the body of literature, which aim to target potential risk factors of PTB. Understanding the role of early menarche on pregnancy outcomes can help the medical community identify additional screening measures and inform intervention strategies to minimize the burden of PTB worldwide.