International Journal of Population Data Science

Journal Website: www.ijpds.org

In-Utero SSRI and SNRI Exposure and the Risk of Long Term Adverse Mental and Educational Outcomes in Children: A Population-Based Retrospective Cohort Study Utilizing Linked Administrative Data

Singal, D¹, Chateau, D¹, Dahl, M¹, Katz, L², Ruth, C¹, Wall-Wieler, E², Hanlon-Dearman, A², and Brownell, M^{2,3}

¹Manitoba Centre for Health Policy, University of Manitoba

²University of Manitoba

³Manitoba Centre for Health Policy

Introduction

Few studies are capable of investigating the impact of untreated maternal depression versus in-utero antidepressant exposure on long-term effects on children. Previous studies are limited by confounding by indication and are unable to follow children over time to accurately investigate long term outcomes present in childhood and adolescence.

Conclusion/Implications

Administrative data facilitate investigation into an important clinical concern. These data provide robust evidence demonstrating in a large population based sample, in utero exposure to serotonergic antidepressants compared with no exposure does not increase risk of the onset of mood and anxiety disorders and adverse educational outcomes in children .

Objectives and Approach

We utilize linkable administrative data to facilitate longitudinal analysis to investigate mental and educational outcomes in children exposed to in utero antidepressants. Using population-level linked administrative data from a universal health system, this study included all mother-newborn dyads in Manitoba (born 1996 to 2009, with follow-up through 2014). High Dimensional Propensity Scores and inverse probability treatment weighting were used to address confounding by indication and disease severity. Cox Proportional Hazard Regression models were used to estimate risk of mood and anxiety disorder in children and educational outcomes.

Results

Asymmetric trimming of the study cohort resulted in a total of 4998 mother-child dyads; 4159 children whose mothers did not use SSRIs/SNRIs during pregnancy and 839 children who were exposed to 2+ prescriptions in-utero. Use of SSRIs/SNRIs during pregnancy was not associated with an increased risk of mood/anxiety disorder in children HR 1.32 (95% CI 0.67 to 2.62). Initial results on the association between in-utero antidepressant use and early childhood development index (EDI) scores indicate no impact on school readiness (31.9% vs 29.3%), or scores on standardized tests of literacy and numeracy in Grade 3 (28.4% meeting expectation versus 31.4%) and in Grade 7 (68.8% versus 70.0%).