

Prenatal Can Reduce the Burden of Preterm Birth and Low Birthweight from Maternal Sexually Transmitted Infections: US National Data

Authors : Anthony J. Kondracki, Bonzo I. Reddick, Jennifer L. Barkin

Abstract : We sought to examine the association of maternal Chlamydia trachomatis (CT), Neisseria gonorrhoeae (NG), and treponema pallidum (TP) (syphilis) infections with preterm birth (PTB) (<37 weeks gestation), low birth weight (LBW) (<2500 grams) and prenatal care (PNC) attendance. This cross-sectional study was based on data drawn from the 2020 United States National Center for Health Statistics (NCHS) Natality File. We estimated the prevalence of all births, early/late PTBs, moderately/very LBW, and the distribution of sexually transmitted infections (STIs) according to maternal characteristics in the sample. In multivariable logistic regression models, we examined adjusted odds ratios (aORs) and their corresponding 95% confidence intervals (CIs) of PTB and LBW subcategories in the association with maternal/infant characteristics, PNC status, and maternal CT, NG, and TP infections. In separate logistic regression models, we assessed the risk of these newborn outcomes stratified by PNC status. Adjustments were made for race/ethnicity, age, education, marital status, health insurance, liveborn parity, previous preterm birth, gestational hypertension, gestational diabetes, PNC status, smoking, and infant sex. Additionally, in a sensitivity analysis, we assessed the association with early, full, and late term births and the potential impact of unmeasured confounding using the E-value. CT (1.8%) was most prevalent STI in pregnancy, followed by NG (0.3%), and TP (0.1%). Non-Hispanic Black women, 20-24 years old, with a high school education, and on Medicaid had the highest rate of STIs. Around 96.6% of women reported receiving PNC and about 60.0% initiated PNC early in pregnancy. PTB and LBW were strongly associated with NG infection (12.2% and 12.1%, respectively) and late initiation/no PNC (8.5% and 7.6%, respectively), and ≤ 10 prenatal visits received (13.1% and 10.3%, respectively). The odds of PTB and LBW were 2.5- to 3-fold higher for each STI among women who received ≤ 10 prenatal visits than > 10 visits. Adequate prenatal care utilization and timely screening and treatment of maternal STIs can substantially reduce the burden of adverse newborn outcomes.

Keywords : low birthweight, prenatal care, preterm birth, sexually transmitted infections

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