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"Marijuana Use in Pregnancy and the Risk of Preterm Birth"

INTRODUCTION: As more of the United States opts towards legalizing marijuana, the amount of marijuana users in general has increased – including women of reproductive age. Specifically, this trend has disproportionately affected socioeconomically disadvantaged women, with up to 15% of pregnant patients self-reporting marijuana use at some time during pregnancy. There have been several studies, both recent and older, that have linked pre-natal marijuana use with small for gestational age, increased perinatal infection rate, and preterm birth. The published literature does not come to a consensus on the effects of THC, the psychoactive substance in marijuana, on birthing outcomes and, when controlled for concomitant tobacco or other illicit drug use, are not statistically significant. Additionally, similar studies have been limited by having an inconsistent data gathering process such that some relied on a mixture of self-reporting systems, electronic medical record, biological specimens, and billing codes. Our objective of this study is to evaluate whether maternal marijuana use during pregnancy increases the risk of spontaneous preterm births in a South-Central Louisiana population where sufficient data is lacking.

METHODS: We conducted a retrospective cohort study of deliveries at Woman's Hospital, Baton Rouge, Louisiana, USA from January 2016 through October 2017 (n=7,065). Notable patient exclusions lacked a urine drug screen (UDS) during pregnancy, had unknown racial, smoking, or body mass index (BMI) status, or had a non-spontaneous preterm delivery. The primary exposure of interest was marijuana during pregnancy assessed by UDS during prenatal care visits or during hospital admission for delivery. The primary outcome was spontaneous preterm birth defined as delivery prior to 37 weeks gestation without medical cause. Odds for spontaneous preterm birth with marijuana use were calculated, and multivariable logistic regression was performed to assess the association of spontaneous preterm birth with marijuana use.

RESULTS: Out of the 7,065 patients, 1,149 (16.3%) tested positive for THC. These patients were less likely to have above a high school education, be ethnically Hispanic, and have private insurance. They were also younger, more likely to be African American, and use concomitant substances, particularly tobacco and alcohol, were elevated in those with a positive THC UDS. Without adjusting for cofounders, patients who tested positive for THC had a significantly higher rate of spontaneous preterm delivery (17.1% vs 13.5%, p=.002). After adjusting for potential confounders, marijuana use was no longer a significant predictor of spontaneous preterm delivery (aOR= 1.12, 95% CI = 0.93-1.35, p-value=.235). Other factors that significantly increased the risk of preterm birth included smoking status, gestational diabetes, hypertensive disorders of pregnancy, previous preterm delivery, other drug use, and increased maternal age. Hispanic ethnicity and increased BMI were associated with decreased odds.

CONCLUSION: Although initial statistics indicate that THC use during any point of pregnancy is associated with a higher rate of spontaneous preterm delivery, when controlling for confounders such as concomitant substance use preterm delivery was no longer statistically significant.