Characteristics of perinatal women seeking treatment for marijuana abuse in a community-based clinic

Golfo Tzilos[1], **Lynn Hess**[2], **Jennifer Chien-Wen Kao**[2], and **Caron Zlotnick**[2]

[1]Center for Alcohol and Addiction Studies, Alpert Medical School of Brown University, Providence, RI.

[2]Women and Infants Hospital, Alpert Medical School of Brown University, Providence, RI.

Abstract

In the US, marijuana continues to be the most frequently used illicit drug among women of childbearing age, including pregnant and postpartum women. Given the critical window for treatment during the perinatal period, more information is needed about the characteristics of women who abuse marijuana and about their unique needs with the goal of improving clinical services and outcomes for both women and their infants. Objectives: To 1) identify a profile of perinatal women seeking treatment for primarily marijuana abuse, and 2) report birth outcomes in a subset of pregnant women with marijuana abuse. Methods: This retrospective clinical chart review study examined 67 adult perinatal women patients (54% ethnic minority) who attended an inner-city, hospital-affiliated outpatient program specializing in substance abuse treatment for women. Of all pregnant women, 26% reported positive urine screens during the first trimester, 41% during the second trimester, and 27% during the third trimester. While the subset of pregnant women was small, exploratory results suggest that infants whose mothers continued to use marijuana during their pregnancies were born at a lower gestational age than mothers who abstained; $t(29) = 2.04$, $p < 0.05$. Conclusion: Identifying potential barriers to treatment could help improve retention in community-based treatment programs during pregnancy and the postpartum period.

Keywords

Pregnant; postpartum; perinatal; marijuana; interventions; birth outcomes

Introduction

Marijuana abuse is a prevalent public health concern, with 11% of U.S. adults reporting recent use in the past year (SAMHSA, 2010). It is also the most commonly abused illicit drug in Rhode Island, with reports of past month use as 12.5%, surpassing the national average of 8.2%. Among women of childbearing age, including perinatal women, it is the most frequently used illicit drug in the United States (SAMHSA, 2010). The use of marijuana during pregnancy is associated with neonatal morbidity, although outcomes across studies are inconsistent, particularly with regard to whether or not statistical adjustments were made for confounding variables – such as psychosocial factors and other drug use – and with regard to the approach taken to ascertain maternal drug use (Bailey et al., 2012; Van Gelder et al., 2010). Potential concerns for the infant include decreases in

Golfo Tzilos, Ph.D., Brown University, Center for Alcohol & Addiction Studies, Box G-S121-4, Providence, RI 02912, Tel (401) 863-6630, Fax (401) 863-6647, Golfo_Tzilos@brown.edu.

length of gestation and slowing of fetal growth, both of which may result in an increased risk for premature birth. Other concerns regarding marijuana use during pregnancy include altered neurobehavioral performance in newborn infants, including their levels of arousal, excitability and regulation (De Moraes Barros et al., 2006). Regarding the effect on birth weight, the findings are equivocal. Some studies have documented small reductions in birth weight associated with marijuana use during pregnancy (Gray et al., 2010; El-Mohandes et al., 2003), while others found no effect on birth weight after controlling for confounders such as other substance use (Van Gelder et al., 2010; English et al., 1997). Moreover, there is growing concern that maternal marijuana use can increase the risk for the fetus to develop a neuropsychiatric disorder and/or a drug addiction (Huizink et al., 2006; Leech et al., 2006).

Pregnancy is associated with a unique opportunity for increasing motivation to change, which can translate to reductions in a woman's marijuana use. While attendance to drug treatment during pregnancy has been associated with increases in infant birth weight and overall reductions in health costs, there is limited research on randomized, controlled interventions for substance abuse during the perinatal period (Terplan & Lui, 2008; Svikis et al., 1997). A recent Cochrane review was the first to examine the effectiveness of psychosocial treatment in pregnant women enrolled in illicit drug treatment programs (Terplan & Lui, 2008). They reviewed nine randomized controlled trials (RCTs) including 546 pregnant women who either received an active treatment of contingency management (CM) or a manual based intervention such as motivational interviewing (MI), versus receiving a pharmacological intervention, a placebo or non-intervention. Six of the nine RCTs included pregnant women who reported marijuana use in addition to either heroin or cocaine use, with 25% of participants meeting criteria for marijuana dependence (Svikis et al., 1997; Haug et al., 2001; Jones et al., 2001; Mullins et al., 2004; O'Neill et al., 1996; Silverman et al., 2001). While CM strategies were found to be effective in improving retention rates of women in treatment programs and demonstrated a minimal effect on illicit drug abstinence, methodological concerns made it difficult to assess the effect of psychosocial interventions on obstetrical and birth outcomes. Overall results suggested no effect of intervention on marijuana abstinence and failed to reveal improvements in birth or neonatal outcomes. A recent RCT targeting substance use during pregnancy and at 3 months postpartum ($N = 168$; 44% reporting marijuana as primary drug) compared a MET-CBT intervention versus brief advice integrated with prenatal care, and found that both yielded reductions of substance use (Yonkers et al., 2012).

Perinatal women face unique barriers to substance use treatment, including stigmatization, access to care, and comorbid psychiatric disorders. While the perinatal period is a time of increased vulnerability to mental health concerns, relatively little is known about the additional impact of a psychiatric comorbidity on substance abuse treatment during the this period (Vesga-Lopez et al., 2008). A recent analysis of 502 women (mean age = 19, SD = 6.4) who were either pregnant or postpartum (16% vs 9% reporting past year marijuana dependence) and had entered substance abuse treatment in the past year identified a mental health treatment disparity such that African American and Hispanic women received less treatment than other groups despite a clear need (Coleman-Cowger, 2012). These results are consistent with previous reports suggesting that there exist important barriers to treatment for this population (Vesga-Lopez et al., 2008).

Given this critical window of time, more information is needed about the characteristics of women who primarily abuse marijuana and their unique needs with the goal of improving treatment services and outcomes for both women and their infants. Therefore, the current aims of this study are to: 1) identify a profile of perinatal women seeking treatment for primarily marijuana abuse, and 2) report birth outcomes in subset of pregnant women with marijuana abuse. To our knowledge, this is the first study to examine characteristics in

pregnant and postpartum women seeking treatment for primarily marijuana use in a community-based substance abuse program.

Methods

Participants

Participants were 67 adult, perinatal women patients (54% ethnic minority) who attended an inner-city, hospital-affiliated outpatient program specializing in substance abuse treatment for pregnant and postpartum women. Inclusion criteria for this study included women meeting DSM-IV criteria for either current marijuana abuse or dependence, as this study targeted women for whom marijuana was the primary drug of choice. This research was conducted in accord with prevailing ethical principles, and the Women & Infant Hospital Institutional Review Board approved this study. Data were extracted from clinical records by a research assistant and included maternal and infant charts for women who primarily endorsed marijuana use. All data analyses were performed using SPSS version 20 (SPSS, 2011).

Procedures

This study relied on retrospective chart review. As such, outcome data were gathered from patient charts, clinical notes, and results from urinalysis records. Illicit drug use, including marijuana, was monitored through supervised weekly urine samples conducted by clinic staff. Any missing urine sample was considered positive, based on clinic policy. Treatment included weekly individual and group sessions, in addition to providing weekly urine samples for toxicology screening. These groups were 60 minutes each session and emphasized psychoeducation and CBT-based curriculum for substance abuse treatment. Psychiatric diagnoses were inferred by clinician interview and assessment.

Results

The average age was 24 years ($SD = 4.1$), 92% were without a partner at enrollment, 46% of the women were high school graduates or received a GED, 96% reported a current or history of a psychiatric disorder, and 76% were currently unemployed or disabled. The majority of women in the program identified with an ethnic minority status (54%), and were either pregnant (46%) or postpartum (54%) (see Table 1 for participant characteristics) at program enrollment. A profile comparison of pregnant and postpartum women revealed non-significant differences between groups (see Table 1). The exception is that more women in the postpartum group reported DCYF involvement than in the pregnant group (54% vs 24%), and this difference was significant; $x^2 = 8.86$, $p = 0.03$.

Frequency of self-reported use during the past month for pregnant women was daily for 12% of women, 3–6 times a week for 13% of sample, and 1–2 times a week for 8%. Of all pregnant women, 26% reported positive urine screens during the first trimester, 41% reported positive during the second trimester, and 27% were positive during the third trimester.

We provide a descriptive profile of birth outcomes from the subset of pregnant women (see Table 2). Overall results of birth outcomes in this sample revealed that 74% of women had vaginal deliveries, most infants (79%) were discharged to go home with mothers after birth, and 19% were taken to foster care. Complications of labor were documented for 25% of women.

Overall, significant reductions in marijuana use were found among both pregnant and postpartum women treatment enrollees. For pregnant women, marijuana use was reported by

percent of positive urine screens per trimester. Of all women that were pregnant, 13% stopped using marijuana at the time of delivery as confirmed by urinalysis, suggesting that the treatment program did have an effect on marijuana use in these women. While the subset of pregnant women was small ($n = 31$), exploratory results suggest that infants whose mothers continued to use marijuana during their pregnancies were born at a lower gestational age than mothers who abstained; $t(29) = 2.04$, $p = 0.05$.

Discussion

This retrospective chart review identified a profile description of pregnant and postpartum women seeking treatment for primarily marijuana abuse in a community-based substance abuse program. Women receiving treatment were largely minority (55%), predominantly single (92%), and 76% were either unemployed or disabled.

In our sample, 96% of women reported a comorbid current or past psychiatric diagnosis. A national survey of past-year pregnant and postpartum women, the National Epidemiologic Survey on Alcohol and Related Conditions, reported that the overall 12-month rate of psychiatric disorders in pregnant and postpartum women was relatively high (25% of past-year pregnant women and 26% of postpartum women). The staggering number of psychiatric diagnoses reported in our sample of substance-abusing women reveals a particularly high-risk group of women who present with challenges that may serve as barriers to treatment access and completion. Potential barriers include the coordination of care between mental health and substance abuse treatment providers, the stigma associated with a mental health and substance use disorder diagnosis, and the aversion to using medication during pregnancy and/or the postpartum period (Grella, 1996).

Obstetric and birth outcomes reported in this study are comparable or better than outcomes reported in other substance abuse treatment programs. For example, a report by Ordean & Kahan (2011) on a comprehensive treatment program found comparable numbers of vaginal deliveries (73%), mean gestational age (38.8 weeks), head circumference (33.9), APGAR score (8.8), and low birth weight rate (16.5%). Comprehensive treatment programs that provide a range of services for substance-abusing pregnant women, including prenatal visits, have demonstrated positive maternal and infant health outcomes. A recent program evaluation of a comprehensive treatment program in Canada for pregnant substance users (mean age = 29; 79% Caucasian) reported decreases in substance use (including marijuana), high compliance rates with prenatal visits, and positive health outcomes for infants (Ordean & Kahan, 2011). Such a treatment model, integrating substance use treatment within a family medicine clinic, has the potential to address several barriers to treatment attendance in this population of women, including access to care and stigma associated with addiction treatment during pregnancy.

There were limitations in the current study. With regard to examining potential effects of marijuana use on infant outcomes, limitations include the small sample size and the difficulty of drawing meaningful comparisons within subsets of pregnant women. With regard to outcome data, as a retrospective chart review, these data were gathered from several charts, clinical notes, and results from urinalysis records. While biological measures (e.g., urinalysis) are superior to self-reported drug use, the study's naturalistic clinic setting may have limited the reliability of data collection over the course of treatment. Psychiatric diagnoses were inferred by clinician assessment and not by standardized measure, such as the Structured Clinic Interview for DSM disorders (SCID).

The identification of risk factors and potential barriers to treatment during this already vulnerable time for women could help improve retention in community-based treatment

programs, ultimately improving outcomes for both women and their infants. Findings from our study identify characteristics of perinatal women who abuse primarily marijuana and suggest that an assessment of potential risk factors (e.g., comorbid psychiatric diagnosis) may increase the likelihood of identifying barriers to treatment. Given the limited research on randomized, controlled interventions for substance abuse during the perinatal period, future controlled studies with larger samples are encouraged.

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Table 1

Characteristics of the study sample by status ($N = 67$)

Variable	Pregnant (n = 31)	Postpartum (n = 36)	p value
Age, mean years (SD)	23 (3.8)	25 (4.2)	0.06
Race/ethnicity			0.76
Latina	11 (36%)	11 (32%)	
African American	5 (16%)	8 (24%)	
Caucasian	14 (46%)	14 (41%)	
Other/multiracial	1 (2%)	1 (3%)	
Relationship status			0.32
Single	27 (87%)	34 (92%)	
Partnered or married	4 (13%)	1 (3%)	
Co-morbid psychiatric diagnosis	28 (90%)	36 (100%)	0.09
DCYF involved	**6 (24%)**	**18 (54%)**	**0.03** [*]
Positive toxicology screens (%)			
First trimester	26		
Second trimester	41		
Third trimester	27		

Note: p values for differences between groups were calculated using Chi-square analyses for dichotomous data; independent t-tests for continuous data

[*] significant at the $p < 0.05$ level

Table 2

Birth outcomes characteristics for pregnant sample ($N = 31$)

Variable	Mean (SD / %)
Gestational age (weeks)	38 (2.3)
Birth weight (grams)	2691 (953)
Low birth weight rate[1] (grams)	10 (15%)
Head circumference (cm)	33 (4.8)
APGAR score (5 min)	8.9 (0.4)
Positive (marijuana) toxicology on delivery	15 (25%)
Prenatal visits	12 (5.9)
NICU admission	10 (18%)
Delivery mode, %	
Vaginal	46 (74%)
Cesarean	16 (26%)
Complications of labor	8 (25%)
Discharge disposition	
Home	46 (79%)
Foster care	11 (19%)
Death	1 (2%)

Note:

[1]Low birth weight rate was defined as weight less than 2500 grams