



Full length article

Postpartum contraceptive use and interpregnancy interval among women with opioid use disorder



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ABSTRACT

Objective: The purpose of this study was to describe postpartum contraceptive utilization patterns among women with OUD and evaluate the relationship between postpartum contraceptive method choice and interpregnancy interval.

Methods: A retrospective cohort study was conducted with women in Pennsylvania Medicaid with a diagnosis of OUD between 2008 and 2013. Postpartum contraceptive use within 90 days after delivery was identified through claims data and categorized by effectiveness (highly-effective, effective, and no method observed). Kaplan-Meier time-to-event analyses and multivariable-adjusted marginal Cox regression models were used to evaluate the relationship between postpartum contraceptive method choice and interpregnancy interval. Multivariable logistic regression analyses were used to identify risk factors predictive of a short interpregnancy interval (≤ 18 months).

Results: We identified 7805 women (9260 pregnancies) who had a diagnosis of OUD. Nearly three-quarters (74.5%) had no contraceptive method observed, 18.1% received an effective method, and only 7.4% received a highly-effective method (LARC or female sterilization) during the postpartum period. In Kaplan-Meier analyses, no significant differences were found in the time-to-next pregnancy interval when an effective contraceptive method vs. no contraceptive method was used. In multivariable analysis, predictors of a significantly longer interpregnancy interval were LARC use (HR 0.43, 95% CI 0.26–0.69), gestational hypertension (HR 0.80, 95% CI 0.65–0.97), and age (HR 0.95, 95% CI 0.94–0.96). Approximately 20% of women with OUD had a short interpregnancy interval.

Conclusion: Few women with OUD use highly-effective postpartum contraception, which is protective against short interpregnancy intervals.

1. Introduction

Unintended pregnancy is prevalent among a growing population of reproductive-aged women with opioid use disorder (OUD) (Black et al., 2012; Heil et al., 2011). Over 86% of women with a history of opioid abuse have had an unintended pregnancy, in contrast to 45% of women in the general population (Finer and Zolna, 2016; Heil et al., 2011). Unintended pregnancy is associated with short interpregnancy intervals and delayed presentation to prenatal care and frequently occurs as a result of inadequate or inconsistent contraceptive use (Finer and Zolna, 2016; Gemmill and Lindberg, 2013; Mayer, 1997; Parks and Peipert, 2016). In an evaluation of over 2000 pregnancies, 74% of women with

a short interpregnancy interval (≤ 18 months) reported that their pregnancy was unintended (i.e., mistimed or unwanted) (Gemmill and Lindberg, 2013). Short interpregnancy intervals have been associated with adverse maternal and neonatal outcomes such as preterm birth and low birthweight, and optimal birth spacing remains an important consideration in women with multiple medical and psychosocial comorbidities (Conde-Agudelo et al., 2006; United States Human Services Office of Disease Prevention and Health Promotion ODPHP, 2017).

Pregnancy and the postpartum period provide unique opportunities to address the reproductive health needs of women with substance use disorders and provide comprehensive family planning services to help prevent unintended pregnancy and optimize interpregnancy intervals

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Table 1
Postpartum contraceptive use following pregnancies complicated by OUD, n = 9260^a.

Demographics	All n = 9260	No method observed n = 6903	Effective method n = 1672	Female sterilization n = 506	LARC n = 179	p-value
Age [years; mean (SD)]	27.3 (4.7)	27.4 (4.7)	26.4 (4.2)	29.8 (4.6)	26.1 (4.3)	< 0.01
15–19	276 (3.0)	210 (3)	55 (3.3)	0 (0)	11 (6.2)	
20–34	8380 (90.5)	6221 (90.1)	1568 (93.8)	430 (85)	161 (89.9)	
35–45	604 (6.5)	472 (6.8)	49 (2.9)	76 (15)	7 (3.9)	
Race						< 0.01
Black	775 (8.4)	609 (8.8)	109 (6.5)	52 (10.3)	5 (2.8)	
White	8129 (87.8)	6017 (87.2)	1512 (90.4)	431 (85.2)	169 (94.4)	
Asian	19 (0.2)	12 (0.2)	4 (0.2)	2 (0.4)	1 (0.6)	
Other	337 (3.6)	265 (3.8)	47 (2.8)	21 (4.2)	4 (2.2)	
Ethnicity						
Hispanic or Latino	332 (3.6)	265 (3.8)	41 (2.5)	22 (4.4)	4 (2.2)	0.03
Parity^b						
≥ 2 pregnancies	2537 (27.4)	1928 (27.9)	358 (21.4)	206 (40.7)	45 (25.1)	< 0.01
Medical Co-morbidities						
Psychiatric disorder ^c	3845 (41.5)	2828 (41)	729 (43.6)	215 (42.5)	73 (40.8)	0.25
Hepatitis C virus (HCV)	2759 (29.8)	2104 (30.5)	470 (28.1)	124 (24.5)	61 (34.1)	< 0.01
Asthma	1264 (13.7)	947 (13.7)	227 (13.6)	72 (14.2)	18 (10.1)	0.54
Gestational hypertensive disorders ^d	914 (9.9)	684 (9.9)	159 (9.5)	59 (11.7)	12 (6.7)	0.25
Gestational diabetes	653 (7.1)	457 (6.6)	120 (7.2)	64 (12.7)	12 (6.7)	< 0.01
Chronic hypertension	317 (3.4)	239 (3.5)	45 (2.7)	26 (5.1)	7 (3.9)	0.06
Thyroid disorder	254 (2.7)	177 (2.6)	52 (3.1)	12 (2.4)	13 (7.3)	< 0.01
Diabetes mellitus	149 (1.6)	101 (1.5)	30 (1.8)	14 (2.8)	4 (2.2)	0.11
HIV	60 (0.7)	50 (0.7)	4 (0.2)	5 (1)	1 (0.6)	0.12
Substance Use History						
Tobacco	6282 (67.8)	4701 (68.1)	1129 (67.5)	326 (64.4)	126 (70.4)	0.32
Alcohol abuse	622 (6.7)	464 (6.7)	103 (6.2)	39 (7.7)	16 (8.9)	0.39
Other substance use ^e	7371 (79.6)	5578 (80.8)	1294 (77.4)	362 (71.5)	137 (76.5)	< 0.01
Substance Use Treatment History						
Methadone	2958 (31.9)	2331 (33.8)	487 (29.1)	104 (20.6)	36 (20.1)	< 0.01
Buprenorphine	2175 (23.5)	1576 (22.8)	433 (25.9)	130 (25.7)	36 (20.1)	0.02
Postpartum Contraceptive Method^f						
No method observed^g	6903 (74.5)	6903 (100)	–	–	–	–
Effective methods	1672 (18.1)	–	1672 (100)	–	–	–
Oral contraceptives	1219 (13.2)	–	1219 (73.9)	–	–	–
Injection	309 (3.3)	–	309 (18.1)	–	–	–
Vaginal ring	144 (1.6)	–	144 (1.6)	–	–	–
Patch	0 (0)	–	0 (0)	–	–	–
Highly effective methods	685 (7.4)	–	–	–	–	–
Female sterilization	506 (5.5)	–	–	506 (100)	–	–
LARC ^h	179 (1.9)	–	–	–	179 (100)	–

^a n (%) unless otherwise specified.

^b Women who had two or more pregnancies covered by Medicaid within the timespan of the dataset.

^c Major depressive disorder, bipolar disorder or schizophrenia.

^d Gestational hypertension, pre-eclampsia, eclampsia.

^e Cocaine, marijuana, amphetamine, hallucinogen and/or sedatives use during pregnancy.

^f within 90 days after delivery.

^g The absence of highly effective or effective contraceptive pharmacy fills.

^h Levonorgestrel-releasing IUD, the Copper T380A IUD or the subdermal contraceptive implant.

(de Bocanegra et al., 2014; Teal, 2014; Zapata et al., 2015). Medicaid eligibility during pregnancy and the postpartum period also facilitates access to highly effective contraceptive methods, such as long-acting reversible contraception (LARC), which have been shown to decrease the incidence of unintended pregnancy and optimize interpregnancy intervals in high-risk populations (American College of Obstetricians and Gynecologists, 2009; Baldwin and Edelman, 2013; Committee on Adolescent Health Care Long-Acting Reversible Contraception Working Group and Gynecologists, 2012; Parks and Peipert, 2016). Despite this, postpartum contraceptive utilization patterns and the impact of these patterns on subsequent interpregnancy intervals have not been evaluated among women with OUD. Therefore, the objectives of this analysis were to evaluate a) the use of postpartum contraception among women with OUD, b) the relationship between contraceptive method choice and interpregnancy interval, and c) the number of women with OUD who had a short interpregnancy interval (≤ 18 months) using a large, population-based, Medicaid dataset.

2. Materials and methods

2.1. Dataset

For this analysis, administrative healthcare claims data from the Pennsylvania Department of Health and Human Services Medicaid Program was utilized. This dataset included claims, encounters, and pharmacy data for all Medicaid enrollees in Pennsylvania (including data from both Medicaid managed care and traditional fee-for-service plans) from January 1, 2008–December 31, 2013. Demographic information was derived from enrollment files and clinical information including ICD-9 diagnostic codes. Type and frequency of health care encounters during pregnancy, delivery, and the postpartum period were derived from inpatient and professional claims. Contraceptive utilization data, including prescription fills for intrauterine devices (IUD), implants, and female sterilization, were obtained from pharmacy, professional, and inpatient claims data. The study was approved by the University of Pittsburgh, Institutional Review Board (IRB) #PRO16120171.

From January 1, 2008–December 31, 2013, 235,990 Medicaid-

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