

Breastfeeding and Opiate Substitution Therapy: Starting to Understand Infant Feeding Choices

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ABSTRACT

INTRODUCTION: Despite research demonstrating the safety and benefit of breastfeeding in opioid substitution therapy, few women in treatment breastfeed. Understanding the factors contributing to the choices women on opioid substitution therapy make about infant feeding is important.

OBJECTIVES: The aim of this study was to better understand and support infant feeding choices and breastfeeding experiences in women on opioid substitution therapy.

METHODS: A systematic review was conducted on five databases: (1) Ovid MEDLINE(R) without revisions, (2) Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations, (3) EMBASE, (4) CINAHL, and (5) FRANCIS. From 1081 articles, 46 articles were reviewed.

RESULTS: The literature supports breastfeeding as an appropriate and safe option for women on opioid substitution treatment. Breastfeeding and rooming-in reduce neonatal abstinence. Women face barriers to breastfeeding due to societal stigma and the lack of patient and health-care provider education.

CONCLUSIONS: Efforts are needed to increase the knowledge that women and health-care professionals have about the safety and benefits of breastfeeding.

KEYWORDS: breastfeeding, opiate substitution, neonatal abstinence, methadone, buprenorphine

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Introduction

Methadone substitution therapy is described as the gold standard for treating opioid addiction in pregnancy.^{1,2} Buprenorphine is emerging as an equally effective treatment.^{3,4} Opioid substitution therapy increases stability in the uterine environment for the fetus and decreases the risks associated with early pregnancy loss and preterm labor. It also reduces maternal drug-seeking behaviors and the associated adverse outcomes and decreases maternal morbidity and mortality. Although the safety of opioid substitution therapy during pregnancy has been demonstrated, many women still worry about the safety of breastfeeding while on such treatment. Since it is the recommendation from the World Health Organization to breastfeed exclusively for the first six months and breastfeeding with complementary foods until two years and beyond, there has been much research done to assess the safety of breastfeeding for women on opiate substitution therapy. This research clearly demonstrates the safety and benefit of breastfeeding, and this is why the Academy of Breastfeeding Medicine and the American Academy of Pediatrics support breastfeeding while taking methadone.^{5,6}

Despite research demonstrating the safety and benefit of breastfeeding during opioid substitution therapy and the support of organizations, such as Academy of Breastfeeding Medicine and Academy of Pediatrics, rates of breastfeeding among women on methadone are low.^{7,8} Our review seeks to describe the literature supporting the safety of breastfeeding in women on opioid substitution therapy. More importantly, grounded in this literature, our review seeks to further describe the factors impacting feeding choice in women on opioid substitution therapy, while understanding the experiences of those breastfeeding in this population. By summarizing the current data available on this topic, we hope to better understand what informs infant feeding practice choice by women and help to improve the training of health-care providers.

Methods

We conducted a literature review of articles about breastfeeding and methadone using five different databases. We searched (1) Ovid MEDLINE(R) without revisions, (2) Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations, (3) EMBASE, (4) CINAHL, and (5) FRANCIS.



The initial search was done on Ovid MEDLINE without revisions (time restricted from 1996 to July Week 1, 2015). This key search combined two sets of terms: (1) infant feeding terms, including breast feeding, breast milk, and bottle feeding, with (2) substance use terms, including methadone, buprenorphine, and heroin. We omitted alcohol and cigarettes from the substance use list, as we were primarily interested in breastfeeding with addiction to illicit substances. This search yielded 402 results. Relevant articles were selected by examining the titles and abstracts of the search results. Two members of the research team independently assessed each result for inclusion.

The Ovid MEDLINE In-Process & Other Non-Indexed Citations (time restricted from 1996 to July 14, 2015) utilized the same search strategy as the initial search and yielded 37 results. Two members of the research team reviewed the titles and abstracts of these 37 results for inclusion.

For the EMBASE search (time restricted from 1980 to 2015 Week 29), the key search was repeated initially but yielded too many results (approximately 10,000). To limit this search, bottle feeding and infant feeding terms were omitted, leaving only those terms specific to breastfeeding. Substance use terms were limited to those relating directly to methadone and buprenorphine, as this was the primary focus of the project. The refined search yielded 416 results. Two members of the research team reviewed the abstracts and article titles.

For the CINAHL search, such as EMBASE, initial searches with all terms yielded too many results. Search terms were then limited to specific terms on breastfeeding and methadone/buprenorphine as done for the EMBASE search. Four hundred ninety-two results were obtained using the refined search. The abstracts and titles of these results were reviewed by two members of the research team to select articles.

The final search was a less detailed basic search done on a humanities and social sciences database, namely, FRANCIS. The purpose of this search was to complete an overview of the results from the humanities and social sciences. The search strategy used was similar to that used on CINAHL. The search yielded 226 results. The results had considerable overlap to the previous searches on traditionally medically relevant databases, but there were also many irrelevant results. Two members of the research team reviewed the 226 results by abstract and title.

In addition to these searches, articles were also selected from looking at the reference list of other publications, 3 additional articles were found.

Results

Results are shown in Figure 1. A total of 43 articles were selected for review, although not all were selected for inclusion in this review. Nine articles demonstrate low levels of methadone and buprenorphine transfer into breast milk.

Twelve articles confirmed that breastfeeding was associated with decreased rates of neonatal abstinence syndrome (NAS). Rooming-in as an effective intervention to reduce rates of NAS was described in four articles. Five studies confirmed that women on opioid substitution therapy face barriers to breastfeeding. Finally, only one article mentioned the lack of training of health-care professionals in supporting women to breastfeed. We have summarized these results.

Low levels of methadone and buprenorphine transfer into breast milk (n = 9). Nine studies examined the concentration of either methadone⁹⁻¹⁴ or buprenorphine^{15,16} in breast milk. Low levels of both medications were found. The low levels of buprenorphine and methadone were transferred into breast milk and were safe for breastfed infants. Importantly, several studies^{6,12,14,17} looked at the level of either methadone or buprenorphine in women's breast milk 30 days or more postpartum. Low levels of methadone or buprenorphine in these longer postpartum samples provide support for long-term breastfeeding.

Breastfeeding is associated with decreased rates of NAS (n = 10). Methadone use in pregnancy is associated with newborn opioid withdrawal known as NAS. NAS is a constellation of symptoms that appears generally 72–120 hours after birth, in the case of methadone. It is treated with both supportive and pharmacological measures.^{2,18}

Breast milk was independently found to reduce NAS, regardless of the method of breast milk delivery.^{8,19-22} Even breastfeeding for as little as 72 hours seemed to decrease the need for NAS treatment.¹¹ One study did not find a difference in NAS rates for breast fed compared to formula fed and expressed breast milk fed infant. The rates in this study may have been similar between the groups because the program used techniques associated with breastfeeding such as swaddling and nursing in a quiet environment,²³ for all exposure groups. High-dose methadone increased the length of NAS treatment overall, but breastfed newborns still had shorter lengths of NAS treatment.²⁴

One program treated NAS in hospital or in a combined model of hospital-based and home treatment.²⁰ Treatment in the combined model included more exclusively breastfed infants, but the treatment was longer.²⁰ This suggests that treatment at home could increase breastfeeding rates for infants being treated for NAS.

For NAS-treated infants, breastfed infants had higher rates of weight loss compared to formula-fed infants. However, in infants who were not admitted for treatment, the reverse was found.²⁵ Maximal weight loss was on day 4 for breastfed infants and on day 5 for formula-fed groups.²⁵ Since poor weight gain often leads to cessation of breastfeeding, greater tolerance for weight loss for breastfed infants being treated for NAS may reduce cessation of breastfeeding.

Multiple daily dosing of methadone was studied in one program.²⁶ The rate of treated NAS was only 29%, and the breastfeeding rate was 81% in the neonatal period. The

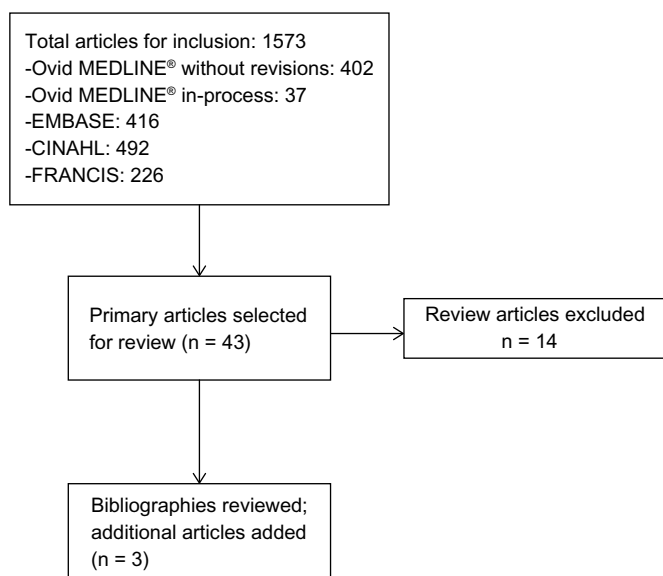


Figure 1. Search strategy.

program also included weekly meetings with a pregnancy counselor, education support groups, as well as psychiatric assessment and monthly psychotherapy support. It is difficult to understand whether it was the multiple dosing, rooming-in, or the additional support that resulted in an 81% breastfeeding rate in the neonatal period.²⁶

Rooming-in reduces NAS and increases breastfeeding (n = 4). Rooming-in has been demonstrated to reduce the rates of NAS and particularly the rates of NAS requiring pharmacologic treatment.²⁷ Importantly, breastfeeding rates were 60% with rooming-in but only 10% in the control group.²⁷ In another review, 37% of nonbreastfed rooming-in infants needed treatment for NAS compared to 12% of those who were breastfed and roomed-in.²⁸ Breastfeeding initiation rates were higher in the rooming-in group, but the rate of breastfeeding when leaving hospital was the same whether in the rooming-in group or not.²⁹ The majority of women who roomed in during another study breastfed their infants for at least 2.5 months.³⁰ Rooming-in increases initiation of breastfeeding and may be associated with longer term breastfeeding.

Women on opioid substitution therapy face barriers to breastfeeding (n = 5). One treatment program reported a 76% of breastfeeding rate in hospital, with 66% continuing to breastfeed at six to eight weeks postpartum.²² One of the reasons authors cite for this elevated rate is that suitability for breastfeeding was less strict compared with other institutions where any substance use in the third trimester excluded women from breastfeeding.²² Programs with more stringent criteria had reduced levels of breastfeeding initiation³¹ with only 24% initiating breastfeeding in hospital, despite reported staff support. Counseling of women prenatally on the benefits of breastfeeding resulted in 60.8% babies receiving some breast milk in hospital.²⁰ Factors implicated in reduced breastfeed-

ing rates include the time required to attend support meetings and therapy sessions, difficulty covering the travel costs, parking, and the required childcare associated with having a newborn in the hospital setting.³¹ It was also felt that there was a lack of education of breastfeeding safety.³¹ Breastfeeding rates were also higher when women presented to care in the first trimester.^{24,25} Increased thresholds for breastfeeding suitability, counseling, and breastfeeding friendly addiction treatment programs should be considered to increase breastfeeding rates.

Surprisingly, little has been written about the maternal experience of breastfeeding while on methadone or buprenorphine. One of the papers on this subject examined a small number of women pregnant or recently postpartum.³² Pregnant women's breastfeeding concerns included: rejection of the breast, cigarette smoking impact, lack of family support, and lack of partner support, including concerns about methadone transfer into the breast milk.³² Both pregnant and postpartum women worried about infecting the baby with the hepatitis C virus, not having enough time to breastfeed, having insufficient breast milk or latching problems, and the infant either experiencing NAS or overdosing on methadone from the breast milk.³² Both pregnant and postpartum women felt that breastfeeding would help their child's health, enhance bonding, be convenient, and mitigate some of the guilt and discomfort if the baby faced withdrawal.³² Women got information about breastfeeding from their mothers, partners, and friends. Partners were often quite anxious about breastfeeding.³² Women were reluctant to discuss being on methadone with their friends and within the treatment program as peers made them feel more anxious.³² While health-care providers within the program were viewed as knowledgeable about breastfeeding and methadone, hospital-based nurses were viewed as unsupportive and unknowledgeable.³²

Women whose infants were treated for NAS in an neonatal intensive care unit (NICU) setting were interviewed about their experience.³³ There were four themes from these interviews.³³ Women reported a lack of understanding about addiction by the nurses. The NICU nurses who were caring for their infants also reported a lack of knowledge regarding addiction.³³ Women felt shame and guilt watching their infants suffer with symptoms of withdrawal³³ and reported feeling judged by the NICU nurses; they expressed gratitude for the absence of judgment.³³ Finally, women reported a lack of trust in NICU nurses.³³ Women's perceptions of the NICU experience are not directly related to breastfeeding, but suggest environments less likely to support breastfeeding. More research is needed to understand maternal experience in addiction treatment programs in general as well as in the NICU.

Health-care professionals lack training in supporting women on methadone to breastfeed (n = 1). Nurses sampled purposively for their experiences reported it to be



challenging to care for families with NAS.³⁴ Critically, nurses felt unprepared to work with women who were defensive about their children and when children were suffering from withdrawal.³⁴ They were also unaware of the benefits of breastfeeding in women maintained on methadone in pregnancy³⁴ and expressed frustration at this lack of training.³⁴ Data on other health-care providers, especially physicians, are not reported, but is likely to be similar. Women and their infants would benefit from more robust training related to breastfeeding and opioid substitution treatment.

Limitations

Literature reviews are limited by literature search parameters. EMBASE, CiNAHL, and FRANCIS literature searches were restricted due to large search returns and duplication of results from the OVID search. The literature is mixed with methadone and buprenorphine treatment, each being reported.

Conclusions

The literature should inform the care of women treated with methadone and buprenorphine. Breastfeeding on opioid substitution is considered as safe and effective in reducing NAS, so is rooming-in. Breastfeeding and rooming-in should thus be a standard of care, where no other concerns exist. It is imperative to remove barriers to breastfeeding in this population and develop local policies and practices that support this.³⁵ Efforts need to be directed toward the reduction of stigma through education of women and health-care practitioners about the safety of opioid substitution during pregnancy and breastfeeding. Programs need to reduce barriers by considering mother- and baby-friendly practices for postpartum women and providing appropriate counseling antepartum. Efforts need to be focused to understand both what women themselves need and what health professionals need to better care for this population. Further research is needed to understand maternal experiences including decisions on infant feeding. Research also needs to focus on gaps in health professional education that perpetuate barriers to breastfeeding. In the face of good evidence to support breastfeeding in women on opioid substitution therapy with methadone or buprenorphine, failing to take this next step is to move away from evidence-informed practice.

Author Contributions

Conceived and designed the experiments: LEG, ST, MN. Analyzed the data: LEG, ST, MN, SS. Wrote the first draft of the article: LEG. Contributed to the writing of the article: LEG, ST, MN, SS. Agreed the article results and conclusions: LEG, ST, MN, SS. Jointly developed the structure and arguments for the article: LEG, ST, MN, SS. Made the critical revisions and approved the final version: LEG, ST, MN, SS. All the authors reviewed and approved the final article.

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