



# Breastfeeding and the Neurologist: An Important Role for Us

## Keywords

Breastfeeding, Pregnancy, Epilepsy, Anti-seizure Medication, Postpartum, Women with Epilepsy, Counselling

Al-Faraj AO, Pandey S, Herlihy MM, Pang TD. Factors affecting breastfeeding in women with epilepsy. *Epilepsia*. 2021;62:2171–2179.

**Objective:** This study aimed to compare rates of breastfeeding initiation and maintenance in women with epilepsy (WWE) with those of the general population and to identify factors affecting breastfeeding patterns in WWE. **Methods:** We retrospectively reviewed data for the following variables in pregnant WWE (n = 102) and healthy women without epilepsy (n = 112): demographic characteristics (age, race, and ethnicity), epilepsy type (focal or generalized onset), anti-seizure medication(s), psychiatric comorbidities, postpartum seizure control, breastfeeding counseling, and lactation consultation. Fisher exact test and logistic regression analyses were performed to compare the rates of breastfeeding initiation and continuation in pregnant WWE with those of healthy pregnant women and to determine factors associated with rates of breastfeeding initiation and maintenance. **Results:** The rate of breastfeeding initiation in WWE was significantly lower than in healthy women without epilepsy (50.9% vs 87.6%), and WWE were less likely to maintain breastfeeding at 6 weeks (38.2%) and 3 months (36%) postpartum. Nearly half (53%) of WWE received antepartum breastfeeding counseling by their neurologists, and these women had higher odds of breastfeeding initiation and continuation (odds ratio [OR] = 2.53, 95% confidence interval [CI] = 1.14–5.72,  $P = .02$ ). Postpartum consultation with a board-certified lactation consultant was associated with higher odds of breastfeeding continuation at 6 weeks (OR = 5.43, 95% CI = 1.39–27.23,  $P = .02$ ) and at 3 months (OR = 4.9, 95% CI = 1.34–20.87,  $P = .019$ ). Women taking levetiracetam were more likely to initiate and continue breastfeeding than those taking lamotrigine (OR = 6.22, 95% CI = 2.15–20.20,  $P = .001$ ). **Significance:** The initiation rate and duration of breastfeeding were significantly lower in WWE than in healthy women without epilepsy and were significantly associated with several factors. Identification of potential barriers to breastfeeding in WWE may lead to development of intervention strategies that can improve breastfeeding rates in WWE to maximize positive health outcomes for WWE and their infants.


## Commentary

Breastfeeding promotes mother–infant bonding and has been associated with immediate and long-term health benefits for both mother and child. Particularly relevant at present, breastfeeding also allows for transfer of maternal antibodies to the infant and is associated with lower rates of infection in children. Despite the known benefits of breastfeeding, it has not been universally recommended to, or adopted by, women with epilepsy (WWE). In the Neurodevelopmental Effects of Antiepileptic Drugs Study (NEAD), which enrolled pregnant WWE between 1999 and 2004, 42.5% of the WWE breastfed.<sup>1</sup> More recently, Johnson and colleagues examined self-reported breastfeeding rates in WWE compared to women without epilepsy (WWE) by analyzing data from CDC surveys of postpartum women between 2009 and 2014. They found that WWE were less likely to breastfeed than WWE (69.1% vs 84.6%,

$P < .001$ ).<sup>2</sup> However, among WWE who chose to breastfeed, the duration was not different from WWE, with the mean duration of breastfeeding being 6.4 and 6.6 weeks respectively.

In the study that is the subject of this commentary, Al-Faraj and colleagues performed a retrospective review of breastfeeding patterns in 102 pregnant WWE who received epilepsy care at Beth Israel Deaconess Medical Center (BIDMC) between 2007 and 2017.<sup>3</sup> Breastfeeding rates and duration were compared to a control group of aged-matched pregnant women without epilepsy or other chronic conditions who received obstetric care at the same hospital. WWE were again shown to be less likely to initiate breastfeeding compared to controls (51 vs 88%). In contrast to the Johnson study, this study found that WWE were more likely to stop breastfeeding before 6 weeks: 75% of WWE who initiated breastfeeding were still breastfeeding at 6 weeks compared to 87% of controls. It should be noted that these between-group comparisons were not adjusted





for variables associated with breastfeeding initiation and maintenance including race, smoking and maternal education.<sup>4,5</sup> Additionally, demographics of the control group were not presented. Data on breastfeeding at 3 months were not available for the control group, but the majority of WWE who were breastfeeding at 6 weeks were still breastfeeding at 3 months (75% vs 71%).

The main focus of the present study was to examine which factors influenced breastfeeding practices among WWE. Two variables had a significant association with both initiation and maintenance of breastfeeding among WWE: 1. Documented counseling regarding breastfeeding by the treating neurologist and 2. The anti-seizure medication (ASM) regimen used by the mother. Just over half (53%) of the WWE in this study received counseling regarding breastfeeding from their treating neurologist and this counseling was associated with significantly higher rates of breastfeeding initiation (OR 2.53, 95% CI 11.4–5.72,  $P = .02$ ) as well as maintenance at 6 weeks and 3 months. The majority of the women in this study were taking levetiracetam (25%) or lamotrigine (42%) monotherapy. Women taking levetiracetam monotherapy were more likely to initiate breastfeeding than women taking lamotrigine (OR 6.22, 95% CI 2.15–20.20,  $P = .001$ ) and were also significantly more likely to continue to breastfeed at both later timepoints.

In addition to neurologist counseling and ASM regimen, documented inpatient consultation with a lactation consultant was significantly associated with maintenance of breastfeeding at 6 weeks and 3 months. Factors that were examined but were not associated with breastfeeding initiation or maintenance in this WWE cohort included ethnicity, education level, employment and marital status. Psychiatric history, epilepsy classification, postpartum seizure control, and counseling by an epilepsy nurse were also not significantly associated with breastfeeding practices in this group. Black race was associated with a lower rate of breastfeeding at 6 weeks and 3 months but was not significantly associated with initiation.

This important study illustrates the critical role that neurologists play in counseling patients about reproductive health issues that have traditionally been seen as being on the periphery of epilepsy care. Counseling by a neurologist is integral to a patient's comfort level with many aspects of reproductive health.<sup>6,7</sup> Our patients look to us as the experts on the medications we prescribe and their potential side effects for both mother and child. This breastfeeding study was possible because of specialized pregnancy templates at BIDMC that both captured data on breastfeeding counseling and encouraged such discussions. This approach may be helpful at other institutions. Specific counseling on breastfeeding may also be important to add to future versions of the epilepsy quality metrics which have drawn attention to topics relevant to counseling WWE.<sup>8</sup>


Neurologists can also promote breastfeeding in our patients by coordinating care with their other providers. A particularly interesting finding of this study was the underutilization of lactation consultations for WWE. The group of patients available for this part of the analysis was small; Only 64% of

WWE ( $n = 66$ ) delivered at the same hospital where they received epilepsy care. Of those with postpartum records to review, however, only 19% of WWE were referred for a lactation consultation compared to 60% of WWoE. The authors comment that the lactation consultant referral is typically ordered by the nurse or obstetrical team. The decreased use of lactation consultants for WWE may reflect institutional ambivalence about recommending breastfeeding to these women. This is another opportunity for neurologists to intervene at a system-wide level. We should reach out to collaborate with and educate all of the interdisciplinary team involved in the care of our pregnant patients including pharmacists, nurses, pediatricians, and obstetricians.

Provider knowledge may have been a factor in the finding that levetiracetam monotherapy was strongly associated with breastfeeding when compared with lamotrigine. The authors suggest that this may have been related to a case report published in 2009 that linked a case of apnea in an infant with high maternal lamotrigine levels.<sup>9</sup> Although this case report did not establish clear cause and effect, it was cited by many online medication databases. I can attest that for a few years this did result in my patients receiving mixed messages from other providers, often requiring me to intervene and put the case report in context. The difference may also relate to the fact that at time these women were being counseled, there had been two publications demonstrated that infant levels of levetiracetam were quite low in breastfed infants.<sup>10,11</sup> This may also have influenced provider confidence in recommending breastfeeding to women taking levetiracetam at the time. Recently, the Maternal Outcomes and Neurodevelopmental Effects of Anti-epileptic Drug Study (MONEAD) published on the infant-to-mother concentrations for 6 different anti-seizure medications (ASMs) in 138 infant-mother pairs.<sup>12</sup> This study reported that 49% of infants had very low ASM serum concentrations, below the lower limit of quantification. The median percentage for infant-to-mother concentration was 5.3% for levetiracetam and 28.9% for lamotrigine. Furthermore, two extremely important studies offer reassurance that ASM exposure through breastmilk has no adverse effects on neurodevelopment.<sup>1,13</sup> In fact the NEAD study found that breastfed infants had stronger verbal abilities at age 6 than children born to WWE who were not breastfed.<sup>1</sup>

As much as I hope that the article by Al-Faraj and colleagues will encourage us all to recommend and facilitate breastfeed in our patients, I want to emphasize the importance of an individualized approach. There is enormous societal pressure for women who have decided to breastfeed to be “successful” at exclusive breastfeeding. For many women this can cause unnecessary stress and self-criticism and can result in them not trying at all. For patients trying to protect their sleep that is important for seizure control this can be particularly anxiety provoking. In my experience counseling about breastfeeding includes not only the reassurance regarding ASMs and breastfeeding, but also an in-depth discussion about the family's plan to assist with night feedings. Involving the patient's partner or family in this discussion early on can be very helpful.



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