

REVIEW ARTICLE

Preventing Premature Weaning: Management Options for Common Lactation Conditions, including OMT

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ABSTRACT: The benefits of breastfeeding are well established. The World Health Organization and the Centers for Disease Control and Prevention recommend that mothers breastfeed infants for at least one year, but most children are not breastfed that long because of many factors. Breastfeeding mothers face many challenges to continued breastfeeding, including medical conditions that arise during this period, such as postpartum depression and lactational mastitis. Because of a perceived lack of consistent guidance on medication safety, it can be difficult for the family physician to treat these conditions while encouraging mothers to continue breastfeeding. The purpose of the current review is to summarize and clarify treatment options for the osteopathic family physician treating lactating mothers. We specifically focus on the pharmacological management of contraception, postpartum depression, and lactational mastitis.

The benefits of breastfeeding are well established. Breastfeeding reduces mortality from infectious disease in childhood, provides a protective effect against the development of diabetes and obesity, and increases cognition.¹ The World Health Organization (WHO) and the Centers for Disease Control and Prevention (CDC) recommend breastfeeding for the first year of life. However, most children are not breastfed that long.² Breastfeeding mothers face challenges in fulfilling this recommendation, including medical conditions that can arise during this period such as postpartum depression and lactational mastitis.

Furthermore, physicians may feel uncomfortable providing pharmacotherapy, the primary therapeutic intervention for these conditions because of the risk of effects on milk supply and to the baby. Therefore, the family physician must be equipped to treat these conditions in such a way as to facilitate continued breastfeeding. Providing quality care for breastfeeding mothers can enable the maintenance of breastfeeding and result in improved outcomes for the mother and baby. The purpose of the current

review is to clarify treatment options for the family physician treating lactating mothers, specifically contraception, postpartum depression, and lactational mastitis.

BARRIERS TO TREATMENT

Treatment of the breastfeeding mother presents many challenges for the physician and the most significant challenge may be lack of knowledge. In general, medical education provides little training in breastfeeding. This deficiency may arise from limited availability of references and resources regarding the pharmacologic treatment of lactating women.^{3,4} Anecdotally, another deficiency may arise from limited educational hours to teach students about treatment during lactation. A Canadian study from 2014 found that three hours of training in this area improved attitudes and knowledge about breastfeeding issues in participating physicians.⁵ Fortunately, educational opportunities exist for those interested in furthering their knowledge. The Academy of Breastfeeding Medicine offers excellent resources, including protocols, but it has only been in existence since 1993.⁶ The WHO offers a 40-hour course on common breastfeeding issues, such as latch problems, but it does not address breastfeeding in the context of medical conditions and their pharmacologic treatment.⁷

The paucity of safety data about medication use in breastfeeding mothers can be an obstacle to effective treatment.³ Most testing of medications is performed in healthy individuals and not in

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breastfeeding mothers. Therefore, the drug package insert or manufacturer information may have limited information for breastfeeding populations. As such, physicians may be reluctant to treat breastfeeding mothers because they lack safety information for prescribed medications.³ This situation may prompt physicians to err on the side of caution and recommend weaning or “pump and dump” until breastfeeding is a reasonably safe option to support.³

Treatment of breastfeeding mothers can be challenging for mothers as well. Six weeks after delivery, mothers are typically discharged or transitioned from the care of their obstetrician. After that time, breastfeeding mothers may find themselves in a medical “no man’s land” for care.⁸ Pediatricians are more concerned with the weight gain and growth of the infant, so they are less likely to address breastfeeding from the maternal viewpoint.⁹

Lactation consultants are readily available in the hospital. However, after discharge, postpartum mothers may have difficulty locating a new provider and determining their insurance coverage of lactation. A discontinuity of care arises with each provider relying on another to care for mothers during this crucial time.⁹ Because the family physician may assume the care of the infant and the mother after the six-week postpartum visit, family physicians are the best-positioned specialty to assist both the mother and child and, thus, should be equipped to handle concerns that arise during lactation.⁹

OVERVIEW OF GENERAL PRESCRIBING GUIDELINES

Given these barriers, it may be helpful to readjust the mindset of physicians regarding medication safety. Because no medication is without risk, the patient can be a helpful ally for the physician to determine which medications are compatible with her desires to breastfeed and her comfort level regarding risk. Therefore, physicians should listen to the patient about her comfort level with various medications and help her consider personal risks and benefits. Because of the many benefits of breastfeeding, physicians should not recommend cessation of breastfeeding unless there is evidence that a drug will be harmful to the infant.

Several factors influence the transfer of a drug from the maternal serum into breast milk: oral availability, lipid solubility, molecular weight, protein binding, and half-life.¹⁰ During breastfeeding, drugs from the maternal bloodstream are filtered through the breast, resulting in a lower concentration in the breast milk. Therefore, when deciding which drug to prescribe, physicians usually begin with a risk/benefit comparison that includes consideration of absorption and pharmacokinetics. When weighing the risks and benefits of medication when breastfeeding, the American Academy of Pediatrics recommends assessing the mother’s therapeutic need for the drug, the potential effects on lactation, the drug passage into the breast milk, the absorption, and the potential adverse effects on the infant.¹⁰

Fortunately, for the treatment of specific conditions, useful resources exist for physicians beyond the medication package

insert.¹¹ LactMed is a database from the National Institutes of Health that contains detailed information about medication safety during lactation.¹² LactMed is peer-reviewed, fully referenced, and continually updated. More specifically, it provides summaries of use during lactation, data on detectable levels in breast milk, effects on the infant, effects on lactation and breast milk production, and alternative drugs to consider when necessary. Physicians can use this information to make the best medical decisions for the patient that are compatible with breastfeeding.¹¹ General prescribing guidelines for breastfeeding mothers are summarized in *Table 1*.

TABLE 1 :

General guidelines for prescribing medications to breastfeeding mothers

<p>Use drugs only when unavoidable.</p> <p>Consider alternative, nonpharmacological treatment when possible</p> <p>Delay initiation until the infant is older when possible.</p> <p>Problems may be lessened in an older infant.</p> <p>Use the lowest possible dose for the shortest possible time.</p> <p>Avoid drugs with long half-lives or sustained-release preparations.</p> <p>Use non-gastrointestinal formulations, such as topical or inhaled/nasal medications.</p> <p>Schedule doses so that the lowest amount appears in breast milk.</p> <p>Consider recommending “pump and dump” if drug is indicated with no alternative.</p> <p>Monitor infant reactions, such as somnolence, fussiness, gastrointestinal upset, and rash.</p> <p>If the drug is commonly prescribed for infants, it is generally safe for breastfeeding mothers.</p> <p>If the drug is commonly safe in pregnancy, it is often safe in breastfeeding mothers.</p>
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POSTPARTUM CONTRACEPTION

The choice of contraception method is important because it can influence a mother’s ability to breastfeed. Natural family planning, the lactational amenorrhea method (LAM), barrier methods, surgical sterilization, or copper intrauterine devices (IUDs) can be used during the postpartum period,¹³ but the current review will focus on pharmacologic hormonal medications. One of the primary treatment considerations for contraception is the potential for hormonal methods to disrupt milk synthesis.¹³ Because a variety of hormonal changes after birth are necessary for the onset of milk production, initiation of hormonal contraception before lactation is established can be a problem.^{13, 14} Breastfeeding is generally well established by four to six weeks after birth, but this timing can vary.¹³ Physicians should consider the breastfeeding goals of the mother, the number and timing of wanted pregnancies, previous birth control methods and results, and partner satisfaction with the birth control method. Many mothers use LAM for contraception, and this method is approximately 98% effective for the first six months after birth if mothers adhere to the method closely.¹⁴ Alternative methods to LAM should be discussed at or before six

months after birth in women who choose LAM initially.

Hormonal methods may be used in place of LAM. The WHO and CDC have slight variations in their recommendations, but in general, patients should remain abstinent for 6 weeks after birth for healing.¹³ Because of limited interference with the breast milk supply, progesterone-only birth control methods can be safely used at any time after six weeks, such as progesterone-only oral medication, the mini pill, or levonorgestrel-releasing IUDs.¹⁴ However, research suggests that the levonorgestrel IUD may be associated with a shorter duration of breastfeeding when placed immediately after birth.¹³ No adverse effects on breastfeeding have been reported when the IUD is placed four to six weeks after birth or later.¹³ Progesterone-only options have the least impact on breast milk supply.¹³ However, estrogen-containing products are an option after breastfeeding is well established. Combined oral contraceptives (COCs), which contain estrogen and progesterone, have a risk of decreasing breast milk supply, especially with older pills that have higher estrogen levels than current products. Because of the potential to interrupt milk supply before the establishment of breastfeeding, COCs should definitely not be started earlier than six weeks after birth.¹⁵ For COC use between 6 weeks and 6 months after birth, there is limited data about their use.¹⁵ Therefore, during that time frame, the risk of diminished breast milk supply must be weighed against the advantage of protecting against unplanned pregnancy. These factors must be considered with the mother so that she can make an autonomous and informed decision. Beyond six months after birth, COCs in general can be safely used.¹⁵ Contraceptive options for breastfeeding mothers are summarized in *Table 2*.

TABLE 2 :

Contraceptive options for the breastfeeding mother by postpartum period

Less Than 6 Weeks	6 Weeks to 6 Months	Greater Than 6 Months
Abstinence ¹³	Lactational amenorrhea method ¹⁴ Progesterone-only medication ¹⁴ Levonorgestrel-releasing intrauterine device ¹⁴ Combined oral contraceptive (with risk/benefit analysis) ¹⁵	Progesterone-only medication ¹⁴ Levonorgestrel-releasing intrauterine device ¹⁴ Combined oral contraceptive ¹⁵

POSTPARTUM DEPRESSION

Postpartum mood disorders are common in the first six months after delivery and occur in up to 15% of women.¹⁶ Nonpharmacologic therapy is preferred when symptoms are mild to moderate.¹⁷ Physicians should not avoid pharmacologic treatment when indicated since there is little evidence of serious adverse effects in infants exposed to antidepressants in breast milk.¹⁸ Therefore, the antidepressant that is most effective for the mother should be considered.¹⁸

There is no widely accepted algorithm for treatment of this condition and prescribing patterns are inconsistent.^{16,19} Breastfeeding support for those with postpartum depression (PDD) involves individualized therapy, medication dose titration with close follow-up, and monitoring. Historically, PDD treatment was restricted to the use of the well-studied drug class of selective serotonin reuptake inhibitors, which are still considered to pose the least risks. Sertraline and paroxetine are considered the first-line treatment for PDD because they have virtually undetectable levels in breast milk.¹⁸ Fluoxetine and citalopram reach higher levels in breast milk; therefore, fluoxetine should not be used during lactation.^{18,19} Overall, sertraline has the best safety profile for lactating mothers with evidence of lower drug levels in breast milk and in infant serum.¹⁹ The recommended starting dose is 25 mg for five to seven days to avoid side effects; it can be increased to 50 mg/day if indicated.¹⁹

Guidance for the treatment of PDD has evolved over the past decade. Currently, serotonin and norepinephrine reuptake inhibitors are also useful in the treatment of PPD. Selective norepinephrine reuptake inhibitors, such as venlafaxine, have slightly higher risks but may still be considered for treatment.^{16,18} Venlafaxine is present in breast milk, but no drug-related side effects have been proven. Therefore, venlafaxine can be used with caution and close monitoring of the infant for sedation and weight gain.¹⁹ Bupropion may be considered, but data about its effects are limited and another drug may be preferred if effective.¹⁹ In the tricyclic antidepressant class, there is enough data to substantiate the use of nortriptyline. Nortriptyline is undetectable in infant serum and has no reported adverse events.¹⁹ Physicians should not use doxepin because of documented adverse effects.¹⁹

According to Sriraman et al.,¹⁹ "If a mother has been successfully treated with a particular selective serotonin reuptake inhibitor, tricyclic antidepressant, or serotonin-norepinephrine reuptake inhibitor in the past, the data for that particular antidepressant should be reviewed and considered as a first-line treatment if there are no contraindications." Mothers successfully treated with any of these three classes of medications during pregnancy should continue using the same medication during breastfeeding.¹⁹ However, both mother and infant should be monitored for side effects.¹⁹ Ultimately, drug choice is often based on successful previous treatment, and previous treatment success is the best predictor of clinical response.

Because of risks to the mother and infant, treatment of PDD is essential for the overall health of the family unit. Further, because of its positive effect on neurodevelopment and other benefits, breastfeeding should be continued during PDD treatment. Breastfeeding mothers need to work closely with their physicians when taking psychotropic medications since some medications have better safety profiles than others. In nearly all cases, an effective medication can be safely taken while continuing to breastfeed. Pharmacological options for treatment of PPD for breastfeeding mothers are summarized in *Table 3*.

TABLE 3 :

Pharmacological options for treatment of postpartum depression in breastfeeding mothers

First-Line Treatment	Use with Caution	Limited Data for Safe Use	Avoid
Sertraline ¹¹	Venlafaxine ^{16,18}	Bupropion ¹⁹	Fluoxetine ¹⁸
Paroxetine ¹¹			Citalopram ¹⁸
Nortriptyline ¹⁹			Doxepin ¹⁹

LACTATIONAL MASTITIS

Lactational mastitis (LM) is the most common issue experienced by postpartum women.²⁰ Worldwide, it has an incidence of 15%-20% in the first six months after birth.²¹

This condition is characterized by inflammation of the mammary tissues, and this inflammation may be the result of a bacterial infection or from a noninfectious source.^{1, 20} Clogged mammary ducts, prolonged breast tissue engorgement, milk stasis, nipple damage, and maternal fatigue have been cited as predisposing factors for LM.^{9,22-25} The effects of LM on a breastfeeding mother should not be underestimated and may lead to premature weaning. The condition is quite painful and the suggestion to continue nursing or pumping through it can be difficult to unsustainable for some mothers. This can be complicated by the potential sequelae of a breast abscess, which can discourage nursing mothers from continuing to breastfeed.^{26, 27} Therefore, prompt and effective treatment is imperative, and if symptoms are mild and less than 24 hours in duration, supportive care is indicated. When LM develops into a bacterial infection or acute maternal illness, antibiotics are indicated. Empiric therapy antibiotic choice should be directed at common microorganisms, such as *Staphylococcus aureus*, including methicillin-resistant *Staphylococcus aureus* (MRSA), *Streptococcus*, and *Escherichia coli*.²⁸ Physicians should also check local patterns for community prevalence of MRSA. Dicloxacillin, amoxicillin-clavulanic acid, or cephalexin should be considered for empiric therapy for non-severe infections without risk factors for MRSA.^{20,21,29} When allergies to these antibiotics are present, physicians should use clindamycin.²⁸ When MRSA is strongly suspected or confirmed, physicians should use trimethoprim-sulfamethoxazole or clindamycin.^{30, 31} To safely use trimethoprim-sulfamethoxazole, the infant must be at least one month old; and if a severe infection is present, vancomycin can be used.^{28, 32} If there is a lack of response to treatment, a culture of breast milk can guide further treatment selection. In general, the length of therapy should be 10-14 days to reduce the risk of relapse.^{30, 31} Antibiotic options for treatment of LM for breastfeeding mothers are summarized in *Table 4*.

OSTEOPATHIC MANIPULATIVE TREATMENT IN LACTATION ISSUES

Lactation problems can be treated with an osteopathic manipulative treatment approach. However, statistical data supporting the efficacy of such treatment of the breast for lactation

TABLE 4 :

Antibiotic options for treatment of lactational mastitis in breastfeeding mothers

First-Line Agents	To Treat for MRSA	For Allergies to First-Line Agents
Dicloxacillin ²⁸	Trimethoprim-sulfamethoxazole ²⁸	Progesterone-only medication ¹⁴
Amoxicillin-clavulanic acid ²⁸	Clindamycin ²⁰	Levonorgestrel-releasing intrauterine device ¹⁴
Cephalexin ²⁸		Combined oral contraceptive ¹⁵

Abbreviation: MRSA, methicillin-resistant *Staphylococcus aureus*.

issues, as well as treatment for the infant for breastfeeding and suckling issues is limited.^{33,34} Treatment goals should include decreasing the biomechanical restrictions that are limiting or affecting normal blood flow and lymphatic return.³⁵ When there is a lack of proper tissue motion, disease processes can develop. Restoring normal motion will result in improved circulation, improved nervous function, decreased venous/lymphatic stasis, improved drug delivery, and optimal breast function.³⁵ Osteopathic techniques that improve localized motion of the breast and the surrounding tissue include lymphatic techniques, myofascial release, balanced ligamentous tension, and counterstrain. As an example, a lymphatic treatment protocol would begin by removing tissue tension around the proximal return into the subclavian vein by performing a release of the thoracic inlet.^{35,36} From there, lymphatic treatment generally moves from a proximal to a distal position and may include techniques around the shoulder, such as pectoral lift/traction, shoulder myofascial release (the Chila method), and scapular release in a lateral recumbent position. Treatment of diaphragm restriction is important for any lymphatic protocol, so a thoracic pump technique may be used as a finishing technique.³⁵ Autonomic and hormonal balance can be achieved by such techniques as occipitoatlantal decompression/release to affect vagal influences and rib raising or balanced ligamentous tension to T1-T7 to affect upper extremity and thoracic viscera sympathetic innervation.³⁶ Finally, anterior and posterior thoracic or rib tender points should be diagnosed and treated with counterstrain. In general, osteopathic treatment of the breast tissue itself is avoided. If it is performed, treatment should be done by someone with expertise and with a chaperone.

CONCLUSION

Although the benefits and recommendations for breastfeeding are clear, few breastfeeding mothers can comply with the recommended one-year duration of sustained breastfeeding. Family physicians are ideally placed to help breastfeeding mothers cope with the challenges of breastfeeding, such as managing LM and related issues. For instance, regarding contraception use while breastfeeding, progesterone only options or IUDs have the least possible impact on milk supply and should be considered after the first six weeks of abstinence.^{13,14} After six months, COCs can safely be used.¹⁵ Between six weeks and six months postpartum, physicians should weigh the risks versus benefits of the use of COCs.¹⁵ For the treatment of PPD during lactation, sertraline and paroxetine are first-line treatment,¹⁸ but certain serotonin-norepinephrine reuptake inhibitors and tricyclic antidepressants can also be used. For individual cases, previous successful treatment with an antidepressant should prompt its use for PPD if it has been demonstrated to be safe during lactation.¹⁹ For the treatment of LM, dicloxacillin, amoxicillin-clavulanic acid, or cephalexin are first-line antibiotic agents.^{20,21,28} When MRSA is suspected or confirmed, treatment with trimethoprim-sulfamethoxazole or clindamycin should be initiated if the infant is at least one month old.^{28,30,31} Ultimately, appropriate treatment of these common problems encountered by lactating mothers can ease their breastfeeding journey. By providing their support, physicians can help prevent premature weaning and increase the well-being of mothers and infant health.

AUTHOR DISCLOSURES:

No relevant financial affiliations or conflicts of interest.

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Kenneth A. Ramey, DO, FACOFP serves as the program director and is a 1994 graduate of the Chicago College of Osteopathic Medicine. He is board certified in family medicine/osteopathic manipulative treatment, neuromusculoskeletal medicine/osteopathic manipulative medicine and has a certificate of added qualification in sports medicine. Dr. Ramey is a member of the medical staff at Sky Ridge Medical Center and has served as a team physician at the high school, college and semi-professional levels. He is an Associate Professor of OPP at Rocky Vista University and serves as the Director of the Sports Medicine and Osteopathic Manipulative Medicine Program at the Rocky Vista Health Center.

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John Martin Littlejohn, DO