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Duloxetine

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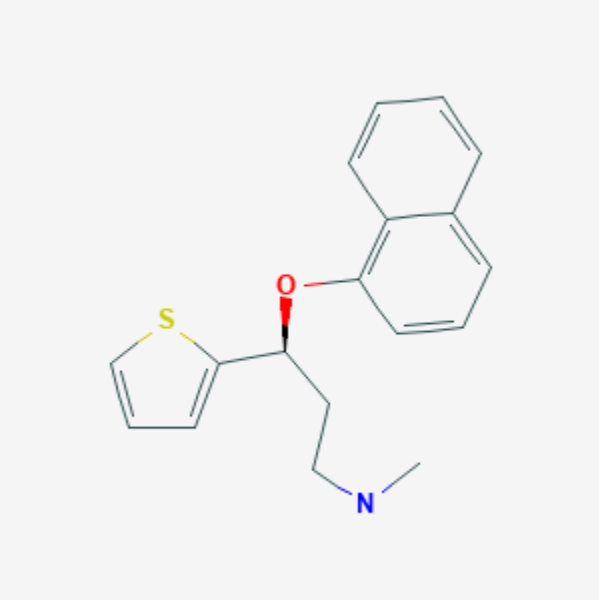

Drug Levels and Effects

Summary of Use during Lactation

Little published information is available on the use of duloxetine during breastfeeding; however, the dose in milk is low and serum levels were low in two breastfed infants. If the mother requires duloxetine, it is not a reason to discontinue breastfeeding. Expert opinion finds duloxetine acceptable to use during breastfeeding,[1] and a safety scoring system finds duloxetine use to be possible to use cautiously during breastfeeding.[2] An alternate drug that has been better studied may be preferred, especially while nursing a newborn or preterm infant. Monitor the infant for drowsiness and adequate feeding, weight gain and developmental milestones, especially in younger, exclusively breastfed infants and when using combinations of psychotropic drugs. Galactorrhea has been reported in women taking duloxetine.

Drug Levels

Maternal Levels. Six lactating women who were at least 12 weeks postpartum and weaning their infants were given duloxetine 40 mg with food every 12 hours for 3.5 days. Milk samples from both breasts were obtained before and at 1, 2, 3, 6, 9 and 12 hours after the dose on day 4. Peak milk duloxetine levels occurred at an average of 6 hours after the dose. The amount of duloxetine excreted into breastmilk was approximately 7.4 mcg (range 3.6 to 15 mcg) daily in these women. The normalized milk excretion corresponded to a daily infant dosage of 0.2 mcg/kg or 0.14% (maximum 0. 0.25%) of the weight-adjusted maternal dosage. The excretion of duloxetine metabolites, which are inactive, into breastmilk was not studied.[3]

A woman took oral extended-release duloxetine 60 mg (868 mcg/kg) daily during pregnancy and breastfeeding. On day 32 postpartum, milk samples were obtained 10 minutes and 6 hours after the dose. The first (trough) sample contained 31 mcg/L of duloxetine and the second (peak) sample contained 64 mcg/L. The authors calculated that an exclusively breastfed infant would receive a dose of 7.1 mcg/kg daily at this maternal dosage, corresponding to 0.82% of the weight-adjusted maternal dosage.[4]

A woman with recurrent depression took duloxetine 60 mg daily throughout pregnancy and breastfeeding. At 18 days postpartum, the mother collected milk samples before the daily dose and at 8 more times during the next 22.5 hours. The peak milk concentration occurred at about 7 hours after the dose. The average milk concentration over the 24-hour dosage interval was 51 mcg/L. Hindmilk concentrations were somewhat higher than foremilk concentrations at the 2 times when they were measured separately. The authors estimated that the infant received a duloxetine dose of 0.81% of the mothers weight-adjusted dose via breastmilk.[5]

A partially nursing mother was taking duloxetine 90 mg and extended-release methylphenidate (Concerta) 36 mg daily for ADHD, generalized anxiety disorder, borderline personality disorder, and depression. On day 29, a milk sample was taken 6.5 hours after her doses. The duloxetine concentration in milk was 32.8 mcg/L with an estimated relative infant dosage of 0.3%, assuming milk intake of 150 mL/kg daily. Another mother was taking duloxetine 60 mg daily while partially nursing her infant. On day 6 postpartum, foremilk taken at 21.6 hours after her dose contained 23.6 mcg/L, and hindmilk taken at 23.3 hours after the dose contained 14.3 mcg/L. These values corresponded to relative infant dosages of 0.4% and 0.2%, respectively, assuming milk intake of 150 mL/kg daily. At 6 weeks postpartum foremilk taken at 5.2 hours after her dose contained 25.2 mcg/L, and hindmilk taken at 5.6 hours after the dose contained 29.3 mcg/L. These values both corresponded to relative infant dosages of 0.4%, assuming milk intake of 150 mL/kg daily.[6]

Infant Levels. An infant whose mother was taking oral extended-release duloxetine 60 mg daily was exclusively breastfed. On day 32 of life, a blood sample was obtained 4 hours after the previous nursing which was 8 hours and 15 minutes after the mother's previous dose. Duloxetine was undetectable (<1 mcg/L) in the infant's plasma. [4]

An infant was breastfed (extent not stated) by a mother taking duloxetine 60 mg daily. At 18 days of age, the infant's plasma concentration was 0.82% that of the mother's plasma level at 7.6 hours after the mother's dose.[5]

Effects in Breastfed Infants

A partially nursing mother was taking duloxetine 90 mg and extended-release methylphenidate (Concerta) 36 mg daily for ADHD, generalized anxiety disorder, borderline personality disorder, and depression. She partially (amount not stated) breastfed her infant for about 1 month. At 6 months of age, infant's development was considered to be normal, except for recurrent pneumonia caused by congenital pulmonary airway malformation. Another mother took duloxetine 60 mg daily while partially (amount not stated) nursing her infant. At 6 weeks of age, no adverse events were observed in the exposed infant.[6]

One mother reported a possible adverse reaction of drowsiness in her baby in the first few weeks after birth. She was taking agomelatine in an unspecified dose with duloxetine 90 mg daily. She attributed the drowsiness to agomelatine and continued breastfeeding her baby until 9 months of age. She reported some developmental concerns of speech and low muscle tone in her baby who was 9 months of age at the time of follow-up.[7]

Effects on Lactation and Breastmilk

In a small prospective study, 8 primiparous women who were taking a serotonin reuptake inhibitor (SRI; 3 taking fluoxetine and 1 each taking citalopram, duloxetine, escitalopram, paroxetine or sertraline) were compared to 423 mothers who were not taking an SRI. Mothers taking an SRI had an onset of milk secretory activation (lactogenesis II) that was delayed by an average of 16.7 hours compared to controls (85.8 hours postpartum in the SRI-treated mothers and 69.1 h in the untreated mothers), which doubled the risk of delayed feeding behavior compared to the untreated group. However, the delay in lactogenesis II may not be clinically important, since there was no statistically significant difference between the groups in the percentage of mothers experiencing feeding difficulties after day 4 postpartum.[8]

After one nonpregnant woman began taking duloxetine, her serum prolactin increased and previous galactorrhea, which had decreased after stopping venlafaxine, increased again. After stopping duloxetine, her prolactin decreased to normal and galactorrhea ceased.[9]

A woman who was taking duloxetine at an unspecified dose for depression reported a milky discharge from her nipples. She had not experienced this effect with previous antidepressant therapy. Her serum prolactin was elevated, and an MRI of her head found no tumors. Duloxetine was stopped and she was treated with escitalopram 20 mg daily and cabergoline 0.5 mg twice weekly for one month. At this time her serum prolactin was normal and the galactorrhea had stopped.[10]

In a study of cases of hyperprolactinemia and its symptoms (e.g., gynecomastia) reported to a French pharmacovigilance center, duloxetine was not found to have an increased risk of causing hyperprolactinemia compared to other drugs.[11]

A woman taking duloxetine 60 mg daily for depression complained of a milky breast discharge, breast fullness, and breast pain, after taking the drug for a total of 10 weeks. Duloxetine was discontinued and bupropion was started. Two weeks after stopping duloxetine, galactorrhea improved. Six weeks after stopping duloxetine, her serum prolactin had dropped from the previous level of 37.9 mcg/L to 20.2 mcg/L.[12] Her galactorrhea was probably caused by duloxetine.

A woman being treated for migraine with duloxetine 30 mg daily began to have bilateral galactorrhea during the tenth week of treatment. At that time and on repeated measurements, her serum prolactin level was within the normal range. Her galactorrhea ceased 3 days after discontinuation of duloxetine. The authors found that her galactorrhea was probably caused by duloxetine.[13]

An observational study looked at outcomes of 2859 women who took an antidepressant during the 2 years prior to pregnancy. Compared to women who did not take an antidepressant during pregnancy, mothers who took an antidepressant during all 3 trimesters of pregnancy were 37% less likely to be breastfeeding upon hospital discharge. Mothers who took an antidepressant only during the third trimester were 75% less likely to be breastfeeding at discharge. Those who took an antidepressant only during the first and second trimesters did not have a reduced likelihood of breastfeeding at discharge.[14] The antidepressants used by the mothers were not specified.

A retrospective cohort study of hospital electronic medical records from 2001 to 2008 compared women who had been dispensed an antidepressant during late gestation (n = 575) to those who had a psychiatric illness but did not receive an antidepressant (n = 1552) and mothers who did not have a psychiatric diagnosis (n = 30,535).

Women who received an antidepressant were 37% less likely to be breastfeeding at discharge than women without a psychiatric diagnosis, but no less likely to be breastfeeding than untreated mothers with a psychiatric diagnosis.[15] None of the mothers were taking duloxetine.

A woman with major depressive disorder received duloxetine 40 mg twice daily. After 2 weeks, she developed menstrual irregularities and a milky discharge from her breasts. Her serum prolactin was elevated at 205 mcg/L. The duloxetine dosage was decreased to 60 mg once daily and aripiprazole was begun at 2.5 mg daily and then increased to 5 mg daily. Within 2 weeks, galactorrhea had stopped and the serum prolactin had decreased to 118 mcg/L. Six weeks later, serum prolactin was 39 mcg/L. The combination was continued for another 39 weeks with no return of galactorrhea.[16]

A 16-year-old girl was admitted for depression and suicide attempts. She had previously experienced galactorrhea while taking risperidone and escitalopram. She was started on duloxetine 20 mg daily which was increased to 40 mg daily after 5 days. Two days later, small amounts of milk appeared from the right breast. Her serum prolactin was mildly elevated at 26 mcg/L. The dose was reduced to 20 mg daily and the milk production ceased.[17]

A woman with depression was treated with duloxetine 30 mg daily for 1 month, then 60 mg daily. After 4 months of therapy she presented with amenorrhea, lactation and hyperprolactinemia. The patient was treated with cabergoline 0.5 mg twice weekly and duloxetine was discontinued. One month later, the serum prolactin level was normal.[18]

A woman with multiple sclerosis had been treated with duloxetine 60 mg daily for pain and depression for 3 months. She noted a milk-like breast discharge for a month and her serum prolactin was elevated. Duloxetine was changed to escitalopram 10 mg daily. Within days, her galactorrhea stopped and her serum prolactin decreased. Cabergoline 0.25 mg twice weekly was instituted after other causes of hyperprolactinemia were ruled out. The dose was reduced after 3 months and her serum prolactin remained normal.[19]

In a study of 80,882 Norwegian mother-infant pairs from 1999 to 2008, new postpartum antidepressant use was reported by 392 women and 201 reported that they continued antidepressants from pregnancy. Compared with the unexposed comparison group, late pregnancy antidepressant use was associated with a 7% reduced likelihood of breastfeeding initiation, but with no effect on breastfeeding duration or exclusivity. Compared with the unexposed comparison group, new or restarted antidepressant use was associated with a 63% reduced likelihood of predominant, and a 51% reduced likelihood of any breastfeeding at 6 months, as well as a 2.6-fold increased risk of abrupt breastfeeding discontinuation. Specific antidepressants were not mentioned.[20]

Alternate Drugs to Consider

Sertraline, Nortriptyline, Paroxetine

References

1. Larsen ER, Damkier P, Pedersen LH, et al. Use of psychotropic drugs during pregnancy and breast-feeding. Acta Psychiatr Scand Suppl 2015;445:1-28. PubMed PMID: 26344706.
2. Uguz F. A new safety scoring system for the use of psychotropic drugs during lactation. Am J Ther 2021;28:e118-e126. PubMed PMID: 30601177.
3. Lobo ED, Loghin C, Knadler MP, et al. Pharmacokinetics of duloxetine in breast milk and plasma of healthy postpartum women. Clin Pharmacokinet 2008;47:103-9. PubMed PMID: 18193916.
4. Briggs GG, Ambrose PJ, Ilett KF, et al. Use of duloxetine in pregnancy and lactation. Ann Pharmacother 2009;43:1898-902. PubMed PMID: 19809008.
5. Boyce PM, Hackett LP, Ilett KF. Duloxetine transfer across the placenta during pregnancy and into milk during lactation. Arch Womens Ment Health 2011;14:169-72. PubMed PMID: 21359876.

6. Collin-Lévesque L, El-Ghaddaf Y, Genest M, et al. Infant exposure to methylphenidate and duloxetine during lactation: A case report. Breastfeed Med 2018;13:221-5. PubMed PMID: 29485905.
7. Kwok S, Cupitt D, Kennedy D. Breastfeeding exposure to agomelatine – Preliminary findings from an Australian observational cohort study. Neurotoxicol Teratol 2023;98:16-7. doi:10.1016/j.ntt.2023.107222
8. Marshall AM, Nommsen-Rivers LA, Hernandez LL, et al. Serotonin transport and metabolism in the mammary gland modulates secretory activation and involution. J Clin Endocrinol Metab 2010;95:837-46. PubMed PMID: 19965920.
9. Ashton AK, Longdon MC. Hyperprolactinemia and galactorrhea induced by serotonin and norepinephrine reuptake inhibiting antidepressants. Am J Psychiatry 2007;164:1121-2. PubMed PMID: 17606668.
10. Korkmaz S, Kuloglu M, Isik U, et al. Galactorrhea during duloxetine treatment: A case report. Turk Psikiyatri Derg 2011;22:200-1. PubMed PMID: 21870310.
11. Trenque T, Herlem E, Auriche P, Drame M. Serotonin reuptake inhibitors and hyperprolactinaemia: A case/non-case study in the French pharmacovigilance database. Drug Saf 2011;34:1161-6. PubMed PMID: 22077504.
12. Belli H, Akbudak M, Ural C. Duloxetine-related galactorrhea and restless legs syndrome: A case report. Psychiatr Danub 2013;25:266-7. PubMed PMID: 24048395.
13. Demirci S, Unubol M, Demirci K. Galactorrhea with normal prolactin levels associated with duloxetine. J Clin Psychopharmacol 2015;35:346-7. PubMed PMID: 25756878.
14. Venkatesh KK, Castro VM, Perlis RH, Kaimal AJ. Impact of antidepressant treatment during pregnancy on obstetric outcomes among women previously treated for depression: An observational cohort study. J Perinatol 2017;37:1003-9. PubMed PMID: 28682318.
15. Leggett C, Costi L, Morrison JL, et al. Antidepressant use in late gestation and breastfeeding rates at discharge from hospital. J Hum Lact 2017;33:701-9. PubMed PMID: 28984528.
16. Luo T, Liu QS, Yang YJ, Wei B. Aripiprazole for the treatment of duloxetine-induced hyperprolactinemia: A case report. J Affect Disord 2019;250:330-2. PubMed PMID: 30875676.
17. McGrane IR, Morefield CM, Aytes KL. Probable galactorrhea associated with sequential trials of escitalopram and duloxetine in an adolescent female. J Child Adolesc Psychopharmacol 2019;29:788-9. PubMed PMID: 31339744.
18. Özkan HM. [Duloxetine associated galactorrhea and hyperprolactinemia: A case report]. Turk Psikiyatri Derg 2020;31:294-6. PubMed PMID: 33454942.
19. Derle E, Can U. Hyperprolactinemia and galactorrhea with duloxetine in neuropathic pain management. Agri 2021;33:268-71. PubMed PMID: 34671951.
20. Grzeskowiak LE, Saha MR, Nordeng H, et al. Perinatal antidepressant use and breastfeeding outcomes: Findings from the Norwegian Mother, Father and Child Cohort Study. Acta Obstet Gynecol Scand 2022;101:344-54. PubMed PMID: 35170756.

Substance Identification

Substance Name

Duloxetine

CAS Registry Number

116539-58-3

Drug Class

Breast Feeding

Lactation

Milk, Human

Antidepressive Agents

Serotonin-Norepinephrine Reuptake Inhibitors