

Abstract

Psychobiology of Lactation: The association between depression symptoms, depression treatment, and oxytocin during breastfeeding

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Oxytocin stimulates “let-down” during breastfeeding, transferring milk to the nipple for removal by the infant. Studies have found a relationship between depression symptoms and low oxytocin levels in both non-pregnant and postpartum populations. We investigated whether postpartum depression symptoms or treatment, indexed by antidepressant use, was associated with reduced oxytocin during breastfeeding.

Women intending to breastfeed were recruited to a longitudinal study in the third trimester, with oversampling of women at elevated risk for postpartum depression based on diagnostic interview at baseline. During a lab visit at two months postpartum, oxytocin was measured while breastfeeding, with blood samples collected at baseline, 1, 4, 7, and 10 minutes of feeding, and after a 10-minute postfeed rest. At this visit, clinical depression was defined as a score of at least 17 on the Beck Depression Inventory II, and maternal antidepressant use was reported via questionnaire. We plotted mean oxytocin levels and 95% confidence intervals across a breastfeed by postpartum depression and antidepressant use at two months.

In a sample of 166 women breastfeeding at two months, 15 met criteria for clinical depression. 35 mothers were using an antidepressant, with only three also meeting criteria for clinical depression. Clinically depressed mothers showed consistently higher oxytocin levels across a breastfeed compared with non-depressed mothers; however, these trends did not reach statistical significance. Mothers using antidepressants showed lower oxytocin levels across a breastfeed compared to mothers not using antidepressants, with a significant difference arising at seven minutes. Both clinically depressed mothers and those taking antidepressants had shorter durations of any and exclusive breastfeeding compared with non-depressed and untreated mothers; however, these differences were not statistically significant.

Antidepressant use, but not clinical depression, was significantly associated with reduced oxytocin levels during breastfeeding. Further research is needed to explore the effect of antidepressant drugs on oxytocin

Public health biology

