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Injection of oxytocin into paraventricular nucleus reverses depressive-like behaviors in the postpartum depression rat model

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Highlights

- Expression of OXT mRNA and peptide level was decreased in PVN of PPD rats.
- OXT treatment in PVN reversed depressive-like behavior as well as higher plasma CORT level and higher PVN expression of TrkB in PPD rats.
- OXT plays an antidepressant role by modulating HPA axis via TrkB in PVN.

Abstract

Oxytocin (OXT) has been considered as a neuroregulator mediating social behaviors and stress-related disorders. Recent clinical studies suggest that OXT might also act as antidepressant in postpartum depression (PPD) patients, but the mechanism is still unknown. In the present study, we explored the effect of OXT in paraventricular nucleus (PVN) and possible signaling pathway involved in a PPD rat model induced by gestation restraint stress (GRS). PPD rats exhibited depressive-like behaviors with significantly longer immobility time, shorter climbing time, and lower sucrose consumption compared to the control rats. Plasma corticosterone (CORT) level was

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