POSTPARTUM DEPRESSION - GENETIC PROFILLING AND ITS CORRELATION WITH LEVELS OF OXYTOCIN

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Postpartum Depression (PPD) is the "depression suffered by a mother following childbirth - arising from a combination of hormonal change, physical adjustment to motherhood, fatigue and postnatal depression". The severity of the symptoms may vary. Children are at higher risk of developing socio-emotional, cognitive developmental issues as well as other health problems, even developing self-regulatory behaviors.

Oxytocin (OT), as a neurotransmitter, plays a crucial role in human behavior, social interactions and enhances mother-infant bonding. Women with PPD and symptoms of anxiety will have lower oxytocin levels during breastfeeding in comparison with asymptomatic women.

The oxytocin receptor gene (OXTR) transcription is regulated by DNA Methylation (DNAm) on a group of sites such as CpG. Methylation to these sites results in various conditions such as autism spectrum disorder, individual variability unsocial perception and callous-unemotional traits. Studies support those interactions between OXTR genotype at rs53576 – oxytocin receptor to be associated with increased risk for comorbid depressive and disruptive behavior disorders.

Significant interaction between the rs53576 genotype, the degree of methylation at CpG -934 in OXTR, and the presence of prenatal depression on PPD, has also been proved. Moreover, women who don't show any signs of depression throughout pregnancy but carry the rs53576_GG genotype as well as they display high methylation in OXTR are at three times higher risk to develop PPD, in comparison to women of lower methylation levels or carrying the rs53576 A allele.

Finally, current studies even suggest the silencing of OXTR expression as a potential therapeutic approach to those women.