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KANGAROO MOTHER CARE (KMC)/SKIN-TO-SKIN CARE, PERINATAL MOOD AND ANXIETY DISORDERS; CASE STUDY AND THEORIES EXPLORING RELATIONSHIP BETWEEN THE TWO.

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ABSTRACT:
Literature suggests a negative relationship between perinatal mood disorders (includes depression and psychosis, anxiety disorders, bipolar disorder) and parent-infant interaction, parent-infant bonding/ attachment, infant cognitive development, feeding problems—particularly breast feeding, increased incidence of preterm and low birth weight births, adherence to infant anticipatory guidance recommendations. Although exact etiology of depressive symptoms is not determined, it is attributed to possible interruption of maternal hypothalamic-pituitary-adrenal axis (HPA) during pregnancy. It is also postulated that longer it takes to restore the HPA axis to pre-pregnant state, higher are the chances of developing mood disorders, depression or psychosis. Activities or interventions that may speed up this process of restoration of HPA axis include touch, massage, skin to skin care among others. We describe a case, followed by discussion of pertinent issues related to this case and offer discussion on theories exploring the relationship. This is a descriptive case study report and we do not intend to propose a cause-effect relationship based on this single case report, but rather demonstrate possibility that KMC could be beneficial towards achieving positive outcomes in situations where mother is exhibiting depressive symptoms. It is also hoped that such cases would stimulate randomized or non randomized studies exploring causal therapeutic relationships.

Case study :
Mother MBR is a 19 years old, primigravida, caucasian mother, who relocated to Chicago from the adjoining State of Iowa, at approximately 32 weeks gestational age. She has had prenatal care in Iowa, but since she relocated, she has had trouble finding an obstetrician to provide prenatal care. Her prenatal course was complicated by history of bipolar disorder. She has discontinued medications since learning of pregnancy. She is in high school and writes articles and poems to help with stress relief and anxiety relief associated with her bipolar disorder. She also smoked ½ pack per day of cigarettes, which she has reduced to 5 cigarettes per day since learning of pregnancy. She intermittently smokes marijuana (again as an aid to stress and anxiety relief). Mother states that these measures do help her with managing stress and anxiety. Her last marijuana use was 2 days prior to delivery of 2219 grams (birth weight) late preterm female newborn. Her urine tested + for THC (cannabanoids) at delivery. Onset of labor was spontaneous and delivery occurred vaginally at 34 4/7 weeks gestation. Apgar scores were 8/8 at 1/5 minutes respectively and baby did not require any resuscitative measures. Baby's neonatal course was complicated by mild-moderate respiratory distress syndrome, requiring one dose of survanta, assisted ventilation for <1 day and 3 days of nasal

CPAP. Other problems included patent ductus arteriosus and pulmonary hypertension (treated with fluid restriction and a dose of furosemide), presumed sepsis (treated with 7 days of ampicillin and gentamicin) and phototherapy for hyperbilirubinemia. Mother expressed interest in breast feeding, however, she was not very compliant with following recommendations to not use marijuana while breast feeding. Her behavior with staff was erratic and inconsistent (fluctuating between hostile on one hand and polite/courteous at other times). Feedings were initiated at 3 days of age and full feeds were achieved at 7 days of age. Baby was exhibiting problems with temperature maintenance and feedings. During this time, mother continued to write and she wrote a poem for the baby, which was posted at baby's bedside.

On 7th day of life, KMC was recommended and mother practiced KMC between day 8 and 14, duration per session varying between 10 minutes and 60-65 minutes. Mother stated that she appreciated the idea of KMC and it provided her with feeling of being able to do something for her newborn baby. During this time, she also stopped marijuana and baby's feeding problems and temperature problems also stabilized. Mother's behavior towards staff also improved and she was always pleasant towards staff and had a pleasant attitude. Mother also stated that she may incorporate something about KMC in her writings. Baby's weight gain improved and baby was able to be discharged home at 15 days of life. Following discharge, she has come to the clinic for follow up twice and baby has been thriving well. Mother is also doing well. During hospitalization, while she was doing KMC, a formal evaluation for depression/bipolar disorder was not performed.

Psychiatry follow up was recommended for mother to further manage bipolar disorder as outpatient.

Discussion:

Based on this single descriptive case report, we can not suggest that there is a definite cause-effect therapeutic relationship between KMC and lessening of depressive symptoms in this mother. However, it is possible that analyzing the mechanisms of actions for KMC and analyzing the pathophysiology of depressive symptoms, one could come to conclusion that KMC could have attentuating effect on various problems that the mother with depressive symptoms is subjected to.

Variety of psychiatric disorders can become problematic during pregnancy and postpartum period (upto a year). These include (but are not limited to) mood and anxiety disorders, depression, psychosis, bipolar disorder, obscessive compulsive disorder and others. Etiology, among several others, include a blunted HPA axis during pregnancy. This occurs because of increase in placental corticotrophin releasing hormone which is a precursor to HPA activity. With elimination of placenta at delivery, the HPA axis must return to pre-pregnant state and longer this process takes, higher are the risks of development of depression in mother. Skin to skin care/KMC possibly could stimulate the HPA axis in early postpartum period and thus prevent or positively modify the depressive symptoms in the mother.

Randomized and non randomized studies have suggested less anxiety, better parent-infant attachment and more positive interaction with infant when mother practices KMC. In one pilot study, 37.3% of

sample of low-income mothers with preterm infants had elevated depressive scores, which decreased to 16.9% at discharge from the unit providing KMC. Several major benefits of KMC include improved breast feeding outcomes, improved parental-infant attachment/bonding, improved parent-infant interaction, and better adherence to anticipatory guidance recommendations. The mother in this index case did demonstrate positive changes (such as discontinuation of marijuana, transformation into person with positive attitude, improved feeding, improved interaction with baby) with KMC practice.

There is a close relationship between early breast feeding experiences and post partum depression at 2 months post partum. Watkins et al demonstrated that mothers with post partum depression at 2 months, were less likely to still be breastfed (68.6%) compared to mothers without (74.9%) depressive symptoms. Early KMC facilitates establishment of better breast feeding outcomes and better and steady weight gain. KMC results in increased milk volume, doubled rates of successful breastfeeding and increased duration of breastfeeding. Thus elimination of breastfeeding difficulties in early postpartum period, could result in decreased numbers of women with depressive symptoms. During the process of KMC, parent-infant attachment also is influenced positively. Providing support and opportunity for new parents to practice KMC also offers them to take an active role in the care of their newborn and thus result in better bonding and attachment. Better sleep state and raised pain threshold achieved during KMC, leads to a calm, less fussy infant. The infants are better able to relax and are less likely to react negatively to noxious stimuli in the nursery. They also have less diffuclty forming proper attachment with their mothers, thus making mother more confident of handling the newborn. These outcomes lead to decreased risks of women developing depressive symptoms. It is possible that in the mother described in our case may have been benefited by KMC (improved attitude, better feeding tolerance, improved weight gain, ability to stop marijuana). Mothers with depressive symptoms, who are interested in breast feeding, often choose non pharmacologic interventions. KMC and breast feeding in these situations must be encouraged in order to maximize mother-infant attachment potential. If mother's health does not permit her to do KMC, father or any of the extended family members (grand parents) can provide skin to skin care (surrogate KMC), interact with infant and provide social interaction, love and affection. Mother can assume KMC role when she is ready-mentally and physically. During these KMC sessions, mother can also practice gentle infant massage, which facilitates the return of HPA axis to pre pregnant state. Gentle infant massage improves baby's mood and also improves mother's mood and thus facilitates bonding/attachment.

Bibliotherapy (reading) has been mentioned as one of the alternative/complementary modality to use with psychotherapeutic treatment for depressive symptoms. When used as an adjunct to other therapy, it has been shown to reduce anxiety and depression. The mother in our index case incorporated writing (articles, poems) to alleviate her anxiety and stress (and successfully).

Conclusion:

Depressive symptoms during pregnancy and postpartum period have adverse/negative relationship to infant feeding, maternal-infant attachment, long term cognitive and developmental deficits.

Recommended infant care anticipatory guidance is less likely to be adhered to by women with depressive symptoms. This has been postulated to occur because of interrupted and blunted HPA axis. KMC facilitates maternal confidence at child rearing, improves maternal infant attachment, enhances infant feeding outcomes-particularly breast feeding outcomes, and results in decreased chances of long term cognitive deficits.

KMC should be encouraged at the earliest possible opportunity, when infant is clinically stable and ready, and parental readiness has been established. Any duration of KMC is better than no KMC, but in order to maximize the benefits, 60-65 minutes minimum has been recommended. The reported case should stimulate and encourage further rigorous studies to demonstrate evidence based cause-effect therapeutic relationship.

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