Cannabis use and measurement of cannabinoids in

plasma and breast milk of breastfeeding mothers

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Acceptance of cannabis is growing, and use is rising among breastfeeding women in the US. Few studies have investigated infant exposure to ∆9-tetrahydrocannabinol (THC), cannabidiol (CBD), and THC’s metabolites 11-OH-THC and THC-COOH in breast milk nor cannabis use patterns among using breastfeeding mothers. The neurodevelopmental impact on children ingesting breast milk with cannabinoids is relatively unknown, so it is necessary to examine these gaps in research. This observational study measured the simultaneous concentrations of cannabinoids in breast milk and plasma after cannabis use in breastfeeding mothers (M/P ratios), compared cannabinoid concentrations in breast milk two weeks and two months postpartum, evaluated cannabinoid concentrations after edible use in breast milk and plasma, and analyzed use patterns among new breastfeeding mothers.

Breastmilk and plasma samples were collected from volunteer mothers who planned to continue using cannabis while breastfeeding at two weeks and two months postpartum. THC, CBD, 11-OH-THC, & THC-COOH were found in breastmilk and plasma. THC and CBD specifically accumulated in breastmilk after both inhalation and edible use. A significant increase in THC breastmilk concentration was seen from two weeks to two months. An increase in general maternal use postpartum was also observed. Moreover, it was estimated that a daily infant dose of THC from breastmilk was 17.7mcg/day.

This study offers insight into the abundance of cannabinoids in breastmilk and maternal cannabis use behavior postpartum, both important factors affecting developing infants. It also highlights the need to stay wary of cannabis use while breastfeeding since its compounds are present in breastmilk and their neurodevelopmental effects are unknown. Furthermore, it was shown that post-edible breastmilk THC concentrations were similar to inhalation concentrations, implying edibles may not be “safer” than smoked products in regard to THC accumulation in breastmilk.

One limitation of this study was its small participant pool. Additionally, route of administration, cannabis type, dose, frequency of use, and THC and CBD concentrations were not controlled. Future studies should address these limitations and further investigate maternal cannabis use postpartum and the neurodevelopment effects on infants ingesting breastmilk with cannabinoids.