



HASSENFELD
CHILDREN'S
HOSPITAL
OF NEW YORK
AT NYU LANGONE

Exposure to exogenous cannabinoids in prenatal periods and early childhood: Importance of identifying critical windows for brain influences

Aim 1: To quantify urinary concentrations of $\Delta 9$ -THC and its metabolites in banked samples from mother-child pairs.

Hypothesis 1. $\Delta 9$ -THC and its metabolites are detectable in urine samples of pregnant women who did and did not report prenatal marijuana use and their children.

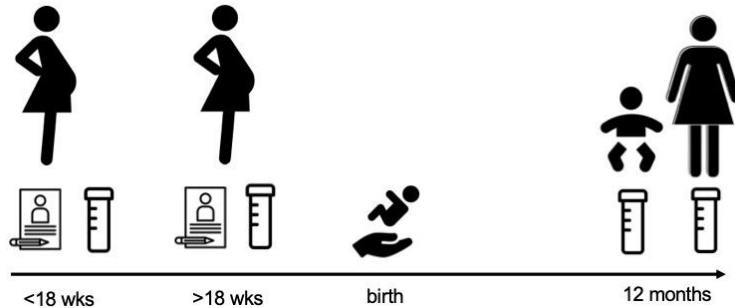
Aim 2: To characterize intra- and inter-individual patterns in urinary concentrations of $\Delta 9$ -THC and its metabolites across pregnancy trimesters and in early childhood.

Hypothesis 2. $\Delta 9$ -THC and its metabolites are most often detected in early-pregnancy urine samples compared with those later in pregnancy. Maternal prenatal concentrations exhibit fair-to-moderate correlations with child urinary levels.

Ritvij Satodiya, MD
Clinical Assistant Professor
Department of Psychiatry
NYU Grossman School of Medicine

Methods

Figure. Study design



Biomarkers of interest

- *11-nor-9-carboxy-Δ9-tetrahydrocannabinol (COOH-THC)*: Longer $t_{1/2}$ and inactive → Sensitive measure for intermittent use
- *Δ9-THC, 11-hydroxy-THC*: Rapidly metabolize → psychoactive and short $t_{1/2}$ → recent exposure
- *Cannabidiol (CBD), Cannabinol*: Inactive and short $t_{1/2}$ → recent exposure

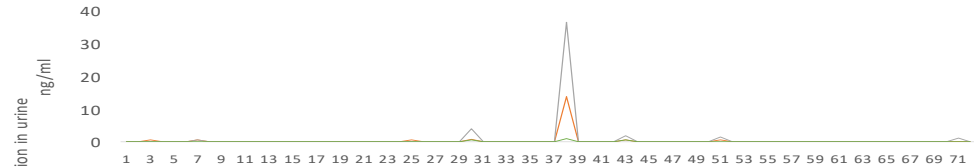
Results

Cannabis metabolites detection in mother/child pairs (n)

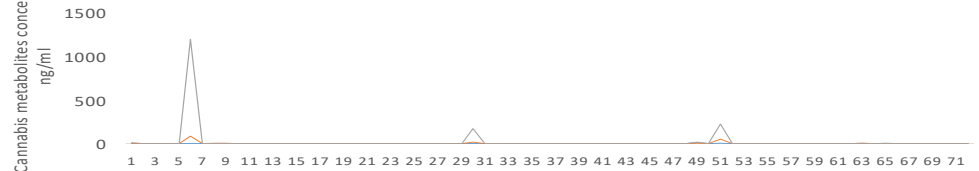


7OH-CBD 11OH-THC COOH-THC CBD

Cannabis metabolites in prematernal urine-Early pregnancy (n=8)



Cannabis metabolites in post natal maternal urine (n=10)



Cannabis metabolites in child urine (n=1)

