

EXPLORING THE RELATIONSHIP BETWEEN THE ENDOCANNABINOID SYSTEM AND SCHIZOPHRENIA USING PET

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FINDING THE RELATIONSHIP BETWEEN TRAUMA AND FAAH LEVELS

FAAH levels → PET scan

Trauma levels → Traumatic Experience Checklist (TEC)
Assesses potentially traumatic experiences in childhood

Confounders to consider: genotype, comorbidities (ex: anxiety), antipsychotic use, antidepressant use and cannabis use.

MY CONTRIBUTION:

Calculating TEC scores for CHRs (n=34) and HCs (n=45)

For each subject, I scored their TEC questionnaire as to measure the amount of trauma in childhood.
How?

Separate traumatic events in TEC into 6 areas of trauma:

- Emotional neglect
- Emotional abuse
- Physical abuse
- Sexual harassment
- Sexual abuse
- Threat to life/bizarre punishment/intense pain

Within each area, categorize the age(s) at which the event(s) occurred in 3 ranges:

- 0-7 yrs. old
- 8-12 yrs. old
- 13-18 yrs. old

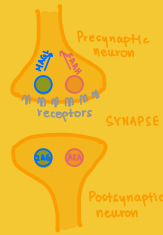
Within each age category, attribute a point for the:

- presence of at least one event
 - duration of more than one year
 - offender being a member of nuclear family
 - impact rating of moderate or more
- [3]

THE ECB SYSTEM

- Regulates and controls learning, emotional processing, sleep, etc.
- Composed of
 - Receptors
 - Endocannabinoids
 - Respective enzymes of those eCBs

Anandamide is the most studied eCB and fatty acid amide hydrolase (FAAH) is its main enzyme.



RELATIONSHIP BETWEEN PSYCHOSIS AND TRAUMA

Psychosis is often triggered by an event.

Ex: stress, cannabis use, trauma, etc. [2]

But everyone goes through some stress or trauma in their life yet not everyone develops psychosis.

What in their brains is altered such that their relationship with trauma is different?

DO THOSE WHO DEVELOP PSYCHOSIS HAVE AN ALTERED ECB SYSTEM?

To check, we can investigate if potential triggers, like trauma, affect their eCB system differently.

How?
Find relationship between trauma and FAAH levels.
Find if that relationship is different in HCs vs. CHRs vs. FEPs

WHY PSYCHOSIS?

Because this study is interested in those at risk of SCZ (not those who already have SCZ, but those showing early symptoms) and psychosis is an early symptom of SCZ.

INTRODUCTION

Schizophrenia(SCZ):

Traditionally → identified with alterations in the dopaminergic system.

BUT, 20-35% of SCZ patients respond poorly to typical antipsychotics. [1]

Hypothesis → other systems, like the endocannabinoid(eCB) system, are involved.

OBJECTIVE

Measure FAAH levels in-vivo in:

- patients with first episode psychosis (FEP)
- individuals at high risk for psychosis (CHR)
- Healthy controls (HCs)

To better understand the relationship between FAAH levels and SCZ.



Clinical & Translational Sciences (CaTS) lab
Dr. Romina Mizrahi's laboratory

References

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