Transition to psychosis in Cannabis abusers

Amresh Srivastava, University of Western Ontario
Amresh Shrivastava
MD, MRCpsych, FRCPC
Associate Professor of Psychiatry
No conflict of interest

Transition to psychosis in Cannabis abusers
Cannabis and Psychosis

- 50-80%
- Ultra high risk candidates & Early psychosis
- Early phase or first episode schizophrenia
- Multifactorial along with Psychosocial factors
- Social determinants of health (SDH)
- Ethnic and geographical differences

Pathway to psychosis in cannabis abusers: understanding

- Consensus
- Controversies
- Hypothesis
- Causal relationship
- Important Considerations in this transition:
- Timeline, Severity, Candidate, & the Substance

The question to question?

• Sequential multifactorial changes which can explain transition to psychosis across developmental period.

• Factors like: individual characteristics, environmental, and neurobiological.

• Determine therapeutic and preventive interventions

Proposed model

- Emphasizes the interaction between genetic and environmental variables, and their influence on neurodevelopment

Development of psychopathology


Psychological & environmental factors → Neurochemical changes → Structural and functional changes: MRI, fMRI
Main theme

It seems that neurobiological changes and the age at which these changes occur in cannabis related psychosis are parallel or similar to those occurring in schizophrenia.

Abstract/Summary

No vulnerability (1)

Biological vulnerability

Genetic studies (2)

Cannabis induced neurobiological changes

Seen in neurochemical and neuroimaging (3)

Cognitive dysfunction(4)

Seen in memory, executive function, information processing

Cognitive dysmetria (4)

Excessive THC

Psychosocial stress & environmental event

External biological events (5)


Risk factors and Psychopathology
Vulnerability: biological and psychosocial


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Transition to psychopathology

- Biological
- Psychological
- Social
- Environmental factors

A complex interaction

Behavioral traits

Psychopathology

Causes of symptom selection is ‘unknown’

Symptoms

Symptoms

Symptoms

A psychiatric illness

??

??

??

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Candidate who develops psychosis

- Vulnerable and Non-vulnerable
- Multiple groups of Endophenotype,
  - Epidemiological,
  - Biological,
  - Cognitive
- There are people with different genetic background –
  - COMT and other genetic markers
  - Twin study –
  - Family history


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Time line

- Consumption at which age leads to psychosis?
- Consumption and development of symptoms:
  - early age consumption and early psychosis,
  - early age consumption and later onset psychosis,
  - later age consumption and psychosis,
  - later age consumption and no psychosis
- Prenatal consumption and Psychosis

Substance

- High potency
- Dose
- Duration
- Nature of plant
- Nature of metabolite

Age spectrum up to 22-25 years remains vulnerable/sensitive

Gene Environment Interaction

COMT

THC

Pre-adolescence period

THC

Adolescence

THC

Post adolescence

Novel hypotheses role of cannabinoids on Neurodevelopmental - being studied

What changes occur?

- Brain development
- Genetic – COMT
- Neurochemical changes
- Functional and structural changes
- Cognitive changes
- Dopamine
- Neuroplasticity
- THC, Cannabinoid legends & receptor


Brain Changes

- CB Receptor
- Cannabinoids

Cognitive dyscontrol

- Executive function
- Information processing

Behavioral Changes

- Dopamine
- 5 HT

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dr.amresh@gmail.com
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Clinical syndromes

Psychosis NOS

Sub clinical symptoms appear?

Transient psychotic episodes

Florid psychosis

Schizophrenia, -like - psychosis

Psychotic disorder

Substance abuse psychosis

Schizophrenia spectrum

Psychosis Schizophrenia

ARMS

Affective disorder

Anxiety disorder
Severity of psychopathology:

- Neurobiological changes are likely to be independent to severity of psychopathology

- No proportionate relationship with brain changes or any other factor
Final statement

- Overall maximum possibility is that ‘in a select group, consumption of low or high potency cannabis, mostly at an early age while neurodevelopment is going on increases propensity of psychiatric symptoms which would mostly start at a later-age under-influence of specific or nonspecific psychosocial stressful conditions.
Co-authors

- Yves Bureau, PhD, C. Psych
  Research Scientist
  Lawson Health Research Institute
  The Western University, Ontario.
- Megan Johnston, Ph.D.
- The University of Toronto, Canada
- Terpstra K, MA
- University of McMaster

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