Transition of substance-induced psychosis to schizophrenia: a systematic review and meta-analysis
Presented by Dr Julia Lappin and Benjamin Murrie

Affiliations: South Eastern Sydney Local Health District; School of Psychiatry, University of NSW; National Drug and Alcohol Research Centre, University of NSW; InforMH, System Information and Analytics Branch, NSW Ministry of Health; Northern Clinical School, Sydney Medical School, University of Sydney
Presentation

Overview of substance induced psychosis

Meta-analysis: what we did

Meta-analysis: what we found

Clinical and Service Implications
Overview of substance induced psychosis
**Substance/drug induced psychosis**

Brief psychotic syndromes triggered by substance use

Persisting for days or weeks after intoxication has resolved

Estimated incidence 1.5-6.5 per 100,000 person years

Up to 25% of first hospital admissions may include this diagnosis

Often excluded from studies of early psychosis
A significant proportion of people later transition to a diagnosis of schizophrenia.

Transition rate highly dependent on substance – cannabis has higher rate of transition.
Substance/drug induced psychosis

66%
Addington et al 2006

33%
Medhus et al 2016

17%
Starzer et al 2017
Meta-analysis: what we did
Aims

• to synthesize the results of longitudinal observational studies of transition from substance-induced psychosis to schizophrenia

• to examine moderators for risk such as
  • substance type
  • gender
  • methodological issues e.g. follow-up periods
Methods - Search Strategy

PsychINFO, MEDLINE, and Embase searched – limited to between 1980-2018

first episode OR drug induced OR substance induced OR stimulant induced OR hallucinogen induced OR cannabis induced OR marijuana induced OR amphetamine induced OR cocaine induced OR LSD induced OR lysergic acid induced OR angel dust induced OR PCP induced OR phencyclidine OR psilocybin induced OR alcohol induced OR opioid induced OR benzodiazepine induced

AND

psychosis OR psychotic

AND

diagnostic stability OR outcome OR follow up OR course OR prognosis OR transition OR conversion OR longitudinal
Methods - Inclusion/Exclusion Criteria

Papers that reported:

- **Baseline diagnosis** of substance-induced, brief, atypical, not otherwise specified (NOS) or schizophreniform psychoses

- **A follow-up diagnosis in the same subjects** – minimum 6 months

- **Number of persons** with a diagnosis of schizophrenia at the follow-up assessment

- Only case-series, case-control studies, cohort studies and RCTs were included
Meta-analysis: what we found
Search Results

Records screened (n = 6097) → Records excluded (n = 5906)

Full-text articles assessed for eligibility (n = 191) → Full-text articles excluded (n = 141)

Studies included in qualitative and quantitative synthesis (n = 50)
Transition Rate % (Type of Psychosis)

- Substance-induced: 25%
- Brief and atypical: 30%
- NOS: 44%
- Schizophreniform: 65%
- Overall: 44%
Transition Rate % (Substance Type)

- Alcohol: 9%
- Sedatives: 10%
- Opioids: 12%
- Amphetamines: 22%
- Mixed or not specified: 22%
- Hallucinogens: 26%
- Cannabis: 34%
Results – Subgroup Analysis of Substance-Induced Psychosis

• Studies of older people reported lower rates of transition to schizophrenia

• No association between transition rate and
  • Sex
  • Duration of follow-up
  • Proportion followed up or
  • Year of publication
Clinical and Service Implications
More than one third with cannabis-induced psychosis

Consistent with literature that cannabis use doubles the risk of developing schizophrenia in vulnerable people

Familial risk and genetic predisposition play a key role in the development of cannabis-induced psychosis and later transition to schizophrenia
Substance-induced psychosis is not a benign or self-limiting condition

Substance-induced psychosis is a common reason for seeking mental health care

> 1 in 5 first hospital admissions for psychosis in young Australians are substance-induced

Often excluded from early psychosis services due to perception that these self-resolve

Transition rate of substance induced psychosis similar to that of brief/atypical psychosis

Length of follow-up **not** associated with transition rate
Methamphetamine-related psychosis is a growing public health concern. All individuals with transient amphetamine-related psychotic symptoms should be considered to be at risk for future development of an enduring psychotic illness, and prioritized for early intervention of integrated care across substance use and mental health services.

Contemporary views of psychosis challenge the simple categorical distinction between brief drug-induced psychoses and more enduring disorders such as schizophrenia. Psychoses are seen increasingly as heterogeneous disorders with a spectrum of illness profiles and course trajectories [11]. Substantial evidence exists that diagnoses of drug-induced psychosis have poor predictive validity. A high

JULIA M. LAPPIN¹,², GRANT E. SARA³,⁴ & MICHAEL FARRELL²

School of Psychiatry, University of New South Wales, Sydney, Australia,¹ National Drug and Alcohol Research Centre, University of New South Wales, Sydney, Australia,² Discipline of Psychiatry, Sydney Medical School, University of Sydney, Sydney, Australia³ and InforMH,
Substance-induced psychoses are not all equivalent

Care should be assertive early intervention, as for other brief psychotic disorders

Need for monitoring and ongoing support

Decisions regarding care should consider
- the different risks associated with each substance
- *for example* considering a heightened risk for transition from cannabis-induced psychosis versus alcohol-induced psychosis
- comorbid use of other substances
- individual risk factors for psychosis (family history, early life trauma)
Thank you