

---

# UNIT 4 SUBSTANCE INDUCED PSYCHOTIC DISORDER

---

## Structure

- 4.0 Introduction
- 4.1 Objectives
- 4.2 Substance Induced Psychotic Disorders
  - 4.2.1 Causes of Substance Induced Psychotic Disorders
  - 4.2.2 Diagnosis of Substance Induced Psychotic Disorder
  - 4.2.3 Essential Features of Substance Induced Psychotic Disorders
  - 4.2.4 Difference Between Substance Induced Psychotic Disorders and Other Psychotic Disorders
- 4.3 Subtypes and Specifiers
- 4.4 Diagnosis
  - 4.4.1 Differential Diagnosis of Substance Induced Psychotic Disorder and Medicine Induced Psychotic Disorders
- 4.5 Treatments
  - 4.5.1 Hospitalisation
  - 4.5.2 Medical Care
  - 4.5.3 Counselling
  - 4.5.4 Detoxification
  - 4.5.5 Surgical Care
  - 4.5.6 Medications
  - 4.5.7 Prognosis
  - 4.5.8 Prevention
- 4.6 Let Us Sum Up
- 4.7 Unit End Questions
- 4.8 Suggested Readings

---

## 4.0 INTRODUCTION

---

In this unit we will be dealing with substance induced psychotic disorders. We begin with substance induced psychotic disorders in terms of what are psychotic disorders and what types of such disorders exist. This is followed by the type of substances that could induce these disorders. The various causes that lead to psychoactive substances and their effects resulting in psychotic reactions are discussed. This is followed by diagnostic criteria to decide the substance induced psychotic disorder. We then present the essential features of substance induced psychotic disorders and bring out the differences between these disorders and the medically induced psychotic disorders. This is followed by the subtypes of these disorders and the specifiers. We then use different criteria to diagnose these disorders and make a differential diagnosis of these disorder vis a vis other psychotic disorders. Then we take up the treatments of these

disorders which includes hospitalisation onwards to medical care, counseling and surgical care. The prognosis and prevention are discussed briefly.

---

## **4.1 OBJECTIVES**

---

After completing this unit, you will be able to:

- Define substance induced psychotic disorder;
- Enlist various types of such psychotic disorders;
- Delineate the Symptoms and causes of the disorders;
- Explain the differential diagnosis of substance induced psychotic disorders vis a vis other psychotic disorders; and
- Analyse the different treatment approaches to these disorders.

---

## **4.2 SUBSTANCE INDUCED PSYCHOTIC DISORDER**

---

Let us start with psychotic disorders.

Psychotic disorders are a group of serious illnesses that affect the mind. These illnesses alter a person's ability to think clearly, make good judgments, respond emotionally, communicate effectively, understand reality, and behave appropriately. When symptoms are severe, people with psychotic disorders have difficulty staying in touch with reality and often are unable to meet the ordinary demands of daily life. However, even the most severe psychotic disorders usually are treatable.

There are different types of psychotic disorders, including:

**Schizophrenia:** People with this illness have changes in behaviour and other symptoms — such as delusions and hallucinations — that last longer than six months, usually with a decline in work, school and social functioning.

**Schizoaffective disorder:** People with this illness have symptoms of both schizophrenia and a mood disorder, such as depression or bipolar disorder.

**Schizophreniform disorder:** People with this illness have symptoms of schizophrenia, but the symptoms last more than one month but less than six months.

**Brief psychotic disorder:** People with this illness have sudden, short periods of psychotic behaviour, often in response to a very stressful event, such as a death in the family. Recovery is often quick — usually less than a month.

**Delusional disorder:** People with this illness have delusions involving real-life situations that could be true, such as being followed, being conspired against or having a disease. These delusions persist for at least one month.

**Shared psychotic disorder:** This illness occurs when a person develops delusions in the context of a relationship with another person who already has his or her own delusion(s).

**Substance-induced psychotic disorder:** This condition is caused by the use of or withdrawal from some substances, such as alcohol and crack cocaine, that may cause hallucinations, delusions or confused speech.

**Psychotic disorder due to a medical condition:** Hallucinations, delusions or other

symptoms may be the result of another illness that affects brain function, such as a head injury or brain tumor.

Paraphrenia: This is a type of schizophrenia that starts late in life and occurs in the elderly population.

#### **4.2.1 Causes of Substance Induced Psychotic Disorders**

A large number of toxic or psychoactive substances can cause psychotic reactions. Such substance induced psychosis can occur in multiple ways.

These include the following:

- 1) People may inadvertently ingest toxic substances by accident, either because they do not know any better or by mistake.
- 2) People may take too much of a legitimately prescribed medicine, medicines may interact in unforeseen ways. Doctors may miscalculate the effects of medicines they prescribe.
- 3) People may overdose on recreational drugs they commonly use (such as cocaine), or become dependent on drugs or alcohol and experience psychotic symptoms while in withdrawal from those substances.
- 4) While the substance induced psychosis is triggered and then sustained by intoxication or withdrawal, its effects can continue long after intoxication or withdrawal has ended.
- 5) Drugs of abuse that can cause psychosis include alcohol, amphetamines, marijuana, cocaine, hallucinogens, inhalants, opioids, and sedative-hypnotics, including medicines that are sometimes used to treat anxiety.
- 6) Common over the counter and doctor prescribed medications that can cause psychosis include anesthetics, analgesics, anticholinergic agents, anticonvulsants, antihistamines, cardiovascular medications, antimicrobial medications, antiparkinsonian medications, chemotherapeutic agents, corticosteroids, gastrointestinal medications, muscle relaxants, nonsteroidal anti inflammatory medications like ibuprofen, and anti-depressants.
- 7) Environmental toxins reported to induce psychotic symptoms include anticholinesterase, organophosphate insecticides, nerve gases, carbon monoxide (car exhaust), carbon dioxide, and volatile substances such as fuel or paint.

#### **4.2.2 Diagnosis of Substance Induced Psychotic Disorders**

The following diagnostic criteria must be met before a diagnosis of Substance Induced Psychotic Disorder is warranted. According to the DSM IV TR the symptoms must be

- a) Prominent hallucinations or delusions
- b) Evidence from the history, physical examination, or laboratory findings of either (1) or (2) given below.
  - 1) The symptoms in Criterion A developed during, or within a month of, substance intoxication or withdrawal
  - 2) Medication use is etiologically related to the disturbance
- c) The disturbance is not better accounted for by a Psychotic Disorder that is not substance induced.

If it is other psychotic disorder, the symptoms would include the following:

- i) the symptoms would precede the onset of the substance use (or medication use);
  - ii) the symptoms persist for a substantial period of time (e.g., about a month) after the cessation of acute withdrawal or severe intoxication, or
  - iii) are substantially in excess of what would be expected given the type or amount of the substance used or the duration of use; or
  - iv) there is other evidence that suggests the existence of an independent non substance induced Psychotic Disorder, as for example, a history of recurrent non substance related episodes.
- d) The disturbance does not occur exclusively during the course of a delirium.

### **4.2.3 Essential Features of Substance Induced Psychotic Disorders**

The essential features of Substance-Induced Psychotic Disorder are prominent hallucinations or delusions (Criterion A) that are judged to be due to the direct physiological effects of a substance.

Hallucinations that the individual realises are substance induced are not included here and instead would be diagnosed as Substance Intoxication or Substance Withdrawal with the accompanying specifier with Perceptual Disturbances.

The disturbance must not be better accounted for by a Psychotic Disorder that is not substance induced (Criterion C).

The diagnosis is not made if the psychotic symptoms occur only during the course of a delirium (Criterion D).

This diagnosis should be made instead of a diagnosis of Substance Intoxication or Substance Withdrawal only when the psychotic symptoms are in excess of those usually associated with the intoxication or withdrawal syndrome and when the symptoms are sufficiently severe to warrant independent clinical attention.

### **4.2.4 Difference between Substance Induced Psychotic Disorders and Other Psychotic Disorders**

Table below presents the differences between substance induce and other psychotic disorders.

<b>Substance induced psychotic disorders</b>	<b>Other psychotic disorders</b>
Onset: Following ingesting the substance of abuse	Onset Insidious onset or over a period of time. Has nothing to do with any substance abuse
Course of this disorder is associated with the drug intake. The moment the drug is withdrawn, after the period of withdrawal syndrome, the psychotic episodes also disappear	Course of this disorder continues on and the symptoms reduce or disappear with intake of medications
There must be evidence from the history, physical examination, or laboratory findings of Dependence, Abuse, intoxication, or withdrawal	Physical examination etc do not show any ingestion of drugs. There is no history of substance abuse.

**Schizophrenia and Other Psychotic Disorders**

Substance Induced Psychotic Disorders arise only in association with intoxication or withdrawal states	Other Psychotic disorders do not have any association with drug or intoxication or withdrawal.
May persist for weeks	These precede the onset of substance use or may occur during times of sustained abstinence.
Once initiated the psychotic symptoms may continue as long as the substance use continues	There is no relationship between psychotic features and use of substances
Age of onset has no importance here	Age of onset is very important as for instance the age of onset for schizophrenia is adolescent years to young adulthood
No specific role of history of psychotic disorder	There is history of psychotic disorder at an earlier age level or in the family
Generally there is non auditory hallucinations	In this there is generally auditory hallucinations
The psychotic symptoms persist so long as the substance abuse continues	Psychotic symptoms persist for a substantially long period of time
Persistence of psychotic symptoms for a substantial period of time (i.e., a month or more) after the end of Substance Intoxication or acute Substance Withdrawal.	There is no connection between substance use or withdrawal symptoms and the psychotic features.
Symptoms of psychotic disorder are limited to the use of substance.	The development of symptoms that are substantially in excess of what would be expected given the type or amount of the substance used or the duration of use.

Other causes of psychotic symptoms must be considered even in a person with Intoxication or Withdrawal, because substance use problems are not uncommon among persons with non substance induced Psychotic Disorders.

<p><b>Self Assessment Questions</b></p> <p>1) Describe in detail the various psychotic disorders.</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>2) Define substance induced psychotic disorders.</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>3) What are the criteria to diagnose substance induced psychotic disorders?</p> <p>.....</p> <p>.....</p>
--

.....

.....

.....

4) Describe the essential features of substance induced psychotic disorders.

.....

.....

.....

.....

.....

5) Differentiate between substance induced psychotic disorder and other psychotic disorders.

.....

.....

.....

.....

### 4.3 SUBTYPES AND SPECIFIERS

One of the following subtypes may be used to indicate the predominant symptom presentation. If both delusions and hallucinations are present, indicate whichever is predominant:

*With Delusions:* This subtype is used if delusions are the predominant symptom.

*With Hallucinations:* This subtype is used if hallucinations are the predominant symptom.

The context of the development of the psychotic symptoms may be indicated by using one of the specifiers listed below:

*With Onset During Intoxication:* This specifier should be used if criteria for intoxication with the substance are met and the symptoms develop during the intoxication syndrome.

*With Onset During Withdrawal:* This specifier should be used if criteria for withdrawal from the substance are met and the symptoms develop during, or shortly after, a withdrawal syndrome.

A substance induced psychotic disorder that begins during substance use can last as long as the drug is used. A substance induced psychotic disorder that begins during withdrawal may first manifest up to four weeks after an individual stops using the substance.

The speed of onset of psychotic symptoms varies depending on the type of substance. For example, using a lot of cocaine can produce psychotic symptoms within minutes.

On the other hand, psychotic symptoms may result from alcohol use only after days or weeks of intensive use.

The type of psychotic symptoms also tends to vary according to the type of substance.

For instance, auditory hallucinations (specifically, hearing voices), visual hallucinations,

and tactile hallucinations are most common in an alcohol-induced psychotic disorder, whereas persecutory delusions and tactile hallucinations (especially formication) are commonly seen in a cocaine – or amphetamine-induced psychotic disorder.

---

## 4.4 DIAGNOSIS

---

Diagnosis of a substance-induced psychotic disorder must be differentiated from a psychotic disorder due to a general medical condition.

Some medical conditions (such as temporal lobe epilepsy or Huntington's chorea) can produce psychotic symptoms, and, since individuals are likely to be taking medications for these conditions, it can be difficult to determine the cause of the psychotic symptoms.

If the symptoms are determined to be due to the medical condition, then a diagnosis of a psychotic disorder due to a general medical condition is warranted.

Substance-induced psychotic disorder also needs to be distinguished from delirium, dementia, primary psychotic disorders, and substance intoxication and withdrawal. While there are no absolute means of determining substance use as a cause, a good patient history that includes careful assessment of onset and course of symptoms, along with that of substance use, is imperative.

Often, the patient's testimony is unreliable, necessitating the gathering of information from family, friends, coworkers, employment records, medical records, and the like. Differentiating between substance-induced disorder and a psychiatric disorder may be aided by the following:

*Time of onset:* If symptoms began prior to substance use, it is most likely a psychiatric disorder.

*Substance use patterns:* If symptoms persist for three months or longer after substance is discontinued, a psychiatric disorder is probable.

*Consistency of symptoms:* Symptoms more exaggerated than one would expect with a particular substance type and dose most likely amounts to a psychiatric disorder.

*Family history:* A family history of mental illness may indicate a psychiatric disorder.

*Response to substance abuse treatment:* Clients with both psychiatric and substance use disorders often have serious difficulty with traditional substance abuse treatment programs and relapse during or shortly after treatment cessation.

*Client's stated reason for substance use:* Those with a primary psychiatric diagnosis and secondary substance use disorder will often indicate they "medicate symptoms," for example, drink to dispel auditory hallucinations, use stimulants to combat depression, use depressants to reduce anxiety or soothe a manic phase.

While such substance use most often exacerbates the psychotic condition, it does not necessarily mean it is a substance-induced psychotic disorder.

Unfortunately, psychological tests are not always helpful in determining if a psychotic disorder is caused by substance use or is being exacerbated by it. However, evaluations, such as the MMPI-2 and MAC-R scale or the Wechsler Memory Scale—Revised, can be useful in making a differential diagnosis. Also *Neuropsychological assessment* or Neuropsychological testing is also an important tool for examining the effects of toxic substances on brain functioning. Some physicians may use neuropsychological assessments to reveal patients' cognitive and physical impairment after cocaine use.

Neuropsychological testing assesses brain functioning through structured and systematic behavioural observation. Neuropsychological tests are designed to examine a variety of cognitive abilities, including speed of information processing, attention, memory, and language. An example of a task that a physician might ask the patient to complete as part of a neuropsychological examination is to name as many words beginning with a particular letter as the patient can in one minute. Patients who abuse cocaine often have difficulty completing tasks, such as the one described, that require concentration and memory.

#### 4.4.1 Differential Diagnosis of Substance Induced Psychotic Disorder and Medicine Induced Psychotic Disorders

A diagnosis of Substance-Induced Psychotic Disorder should be made instead of a diagnosis of **Substance Intoxication** or **Substance Withdrawal** only when

- 1) The psychotic symptoms are judged to be in excess of those usually associated with the intoxication or withdrawal syndrome.
- 2) When the symptoms are sufficiently severe to warrant independent clinical attention.
- 3) Individuals intoxicated with stimulants, cannabis, the opioid meperidine, or phencyclidine, or those withdrawing from alcohol or sedatives, may experience altered perceptions (scintillating lights, sounds, visual illusions) that they recognise as drug effects.
- 4) If reality testing for these experiences remains intact (i.e., the person recognises that the perception is substance induced and neither believes in nor acts on it), then the diagnosis is not Substance-Induced Psychotic Disorder.
- 5) Instead, **Substance Intoxication or Withdrawal, With Perceptual Disturbances**, is diagnosed (e.g., Cocaine Intoxication, With Perceptual Disturbances).
- 6) “Flashback” hallucinations that can occur long after the use of hallucinogens has stopped are diagnosed as **Hallucinogen Persisting Perception Disorder**.
- 7) Moreover, if substance-induced psychotic symptoms occur exclusively during the course of a delirium, as in some severe forms of Alcohol Withdrawal, the psychotic symptoms are considered to be an associated feature of the delirium and are not diagnosed separately.
- 8) A Substance-Induced Psychotic Disorder is distinguished from a **primary Psychotic Disorder** by the fact that a substance is judged to be etiologically related to the symptoms.
- 9) A Substance-Induced Psychotic Disorder due to a prescribed treatment for a mental or general medical condition must have its onset while the person is receiving the medication (or during withdrawal, if there is a withdrawal syndrome associated with the medication).
- 10) Once the treatment is discontinued, the psychotic symptoms will usually remit within days to several weeks (depending on the half-life of the substance and the presence of a withdrawal syndrome). If symptoms persist beyond 4 weeks, other causes for the psychotic symptoms should be considered.
- 11) Because individuals with general medical conditions often take medications for

those conditions, the clinician must consider the possibility that the psychotic symptoms are caused by the physiological consequences of the general medical condition rather than the medication, in which case Psychotic Disorder Due to a General Medical Condition is diagnosed.

- 12) The history often provides the primary basis for such a judgment. At times, a change in the treatment for the general medical condition (e.g., medication substitution or discontinuation) may be needed to determine empirically for that person whether the medication is the causative agent.
- 13) If the clinician has ascertained that the disturbance is due to both a general medical condition and substance use, both diagnoses (i.e., Psychotic Disorder Due to a General Medical Condition and Substance-Induced Psychotic Disorder) may be given.
- 14) When there is insufficient evidence to determine whether the psychotic symptoms are due to a substance (including a medication) or to a general medical condition or are primary (i.e., not due to either a substance or a general medical condition), Psychotic Disorder Not Otherwise Specified would be indicated.

*Specify if:*

*With Onset During Intoxication:* if criteria are met for Intoxication with the substance and the symptoms develop during the intoxication syndrome

*With Onset During Withdrawal:* if criteria are met for Withdrawal from the substance and the symptoms develop during, or shortly after, a withdrawal syndrome

**Self Assessment Questions**

1) What are the subtypes and specifiers? Discuss.

.....  
.....  
.....  
.....

2) What are the methods used in diagnosing the substance induced psychotic disorders?

.....  
.....  
.....  
.....

3) Differentiate between substance induced and medicine induced psychotic disorders.

.....  
.....  
.....  
.....

---

## 4.5 TREATMENTS

---

Treatment is determined by the underlying cause and severity of psychotic symptoms. However, treatment of a substance-induced psychotic disorder is often similar to treatment for a primary psychotic disorder such as schizophrenia. Appropriate treatments may include psychiatric hospitalisation and antipsychotic medication.

Treatment is determined by the underlying cause and severity of psychotic symptoms. However, treatment of a substance-induced psychotic disorder is often similar to treatment for a primary psychotic disorder such as schizophrenia. Appropriate treatments may include psychiatric hospitalisation and antipsychotic medication.

### 4.5.1 Hospitalisation

Hospitalisation or inpatient care is the most restrictive form of treatment for a psychiatric disorder, addictive disorder, or for someone with more than one diagnosis. Whether it is voluntary or involuntary, the patient relinquishes the freedom to move about and, once admitted, becomes subject to the rules and schedule of a treatment environment.

Patients who are likely to require hospitalisation include especially if the patient is delirious, suicidal, homicidal, or gravely disabled. As inpatients, they may require the administration of medications (e.g. haloperidol, risperidone, carbamazepine) to relieve any psychosis related to the chemicals inhaled.

Hospitalisation is necessary in cases where an individual is in imminent danger of harming himself or others or has made a suicide attempt. Crisis stabilization, behaviour modification, supervised substance abuse detoxification, and medication management are compelling reasons to consider hospitalisation. Ideally, hospitalisation is at one end of a comprehensive continuum of services for people needing treatment for behavioural problems. It is generally viewed as a last resort after other less restrictive forms of treatment have failed.

Treatment may vary depending on the drug involved. Hallucinogen and phencyclidine psychosis may not respond well to antipsychotics. A supportive approach is preferred, with reassuring, structured, and protective surroundings. Agitation may be best treated with short-acting benzodiazepines.

### 4.5.2 Medical Care

The medical care of patients with inhalant-related psychiatric disorders encompasses many areas.

A team of medical professionals must work in unison to ensure that every aspect of the treatment plan is fulfilled.

### 4.5.3 Counselling

The goals of substance abuse counseling are:

- 1) Achieving and maintaining abstinence from alcohol or other drugs of abuse or, for patients unable or unwilling to work toward total abstinence, reducing the amount and frequency of use and concomitant biopsychosocial sequelae associated with drug use disorders.
- 2) Stabilizing acute psychiatric symptoms.
- 3) Resolving or reducing problems and improving physical, emotional, social, family, interpersonal, occupational, academic, spiritual, financial, and legal functioning.

- 4) Working toward positive lifestyle change.
- 5) Early intervention in the process of relapse to either the addiction or the psychiatric disorder.

Counseling (supportive therapy) should be initiated, along with patient education to explain the dangers of huffing. Evaluate patients for psychiatric comorbidity.

Interventions include the following:

- 1) Motivating patients to seek detoxification or inpatient treatment if symptoms warrant, and sometimes facilitating an involuntary commitment for psychiatric care.
- 2) Educating patients about psychiatric illness, addictive illness, treatment, and the recovery process.
- 3) Supporting patients' efforts at recovery and providing a sense of hope regarding positive change.
- 4) Referring patients for other needed services (case management, medical, social, vocational, economic needs).
- 5) Helping patients increase self-awareness so that information regarding dual disorders can be personalised.
- 6) Helping patients identify problems and areas of change.
- 7) Helping patients develop and improve problem solving ability and develop recovery coping skills.
- 8) Facilitating pharmacotherapy evaluation and compliance. (This requires close collaboration with the team psychiatrist.)

Change in the addictive behaviour may occur as a result of the patient counselor relationship and the team relationship (i.e., counselor, psychiatrist, psychologist, nurse, or other professionals such as case manager or family therapist). A positive therapeutic alliance is seen as critical in helping patients become involved and stay involved in the recovery process. Community support systems, professional treatment groups, and self-help programs also serve as possible agents of positive change. For the more chronically and persistently mentally ill patients, a case manager may also function as an important agent in the change process.

Although patients have to work on a number of intrapersonal and interpersonal issues as part of long term recovery, medications can facilitate this process by attenuating acute symptoms, improving mood, or improving cognitive abilities or impulse control. Thus, medications may eliminate or reduce symptoms as well as help patients become more able to address problems during counseling sessions. A severely depressed patient may be unable to focus on learning cognitive or behavioural interventions until he or she experiences a certain degree of remission from symptoms of depression. A floridly psychotic patient will not be able to focus on abstinence from drugs until the psychotic symptoms are under control.

No controlled studies have been performed to guide the treatment of patients who abuse inhalants and who have inhalant dependence. Additionally, no specific medications indicated by the pharmaceutical industry are available for detoxification from inhalants.

Programs are available that specifically treat inhalant abuse; however, they are rare and difficult to find. Therefore, treatment planning most often is tailored much like that of the

treatment of patients with chemical dependence, in which the first step is to detoxify the patient.

Patients who are addicted to inhalants experience withdrawal symptoms similar to those of any other patient addicted to drugs, including tremors, chills, sweats, cramps, nausea, and hallucinations.

Next, a peer system is established.

Once these 2 tasks are accomplished, assess the patient for physical, cognitive, and neurologic problems. If any problems are noted in these areas, they must be treated immediately. Identify any strengths the patient has and build on these strengths to increase them and to create new additional strengths for the patient. Address any other problems they may have. The goals are to return the patient to the community with a drug-free peer network and to continue or enhance self-support.

Treat any conduct problems noted.

Once the patient is detoxified, evaluate for other psychiatric illnesses using the *DSM-IV-TR*.

The patient should participate in group therapy sessions, 12-step programs/chemical dependency groups, rational-emotive therapy, cognitive behaviour therapy, and family therapy.

Discuss safe sex with the patient, including partner precautions and birth control. In addition, the family should receive education about the disorder, secure substances that could be huffed, and become familiar with local mental health laws regarding commitment policies.

No medications should be used unless a treatable *DSM-IV-TR* diagnosis has been identified.

If the patient has depression independent of the inhalant abuse, treat with the antidepressant of choice.

If the patient abuses alcohol in addition to inhalants, disulfiram (Antabuse) or naltrexone can be used in appropriate settings.

If the patient meets *DSM-IV-TR* criteria for attention-deficit/hyperactivity disorder, a psychostimulant such as pemoline (Cylert) can be used for treatment. The United States Food and Drug Administration (FDA) concluded that the overall risk of liver toxicity from pemoline outweighs the benefits. In May 2005, Abbott chose to stop sales and marketing of their brand of pemoline (Cylert) in the United States. In October 2005, all companies that produced generic versions of pemoline also agreed to stop sales and marketing of pemoline.

If the patient is psychotic as a result of the inhalant abuse (inhalant-induced psychosis), the physician may use an appropriate antipsychotic such as haloperidol (Haldol) or risperidone (Risperdal), with or without a benzodiazepine. This is the physician's choice.

If the patient has an inhalant-induced mood disorder, detoxification is recommended, without the use of any medications unless the depression persists for longer than 2-4 weeks after withdrawal.

#### 4.5.4 Detoxification

Detoxification is also recommended for patients who are experiencing inhalant-induced

anxiety; however, the use of sedatives or antianxiety medications is contraindicated because inhalant intoxication can worsen if the patient uses again.

If the patient cannot maintain sobriety, the physician should consider residential treatment options, which can last anywhere from 3-12 months.

Most persons who abuse inhalants receive most of their medical care in local emergency departments after they have either passed out or become psychotic from chemical inhalation. In the emergency department, they receive supportive care, social interventions, and appropriate medical care.

#### **4.5.5 Surgical Care**

Patients may need liver or kidney transplantation.

Consultations

Chemical dependence counselor

Attorney, if legal problems develop

Social worker

Family therapist

Peer-group therapist

Dietitian (possibly)

Diet

Consultation with a dietitian may be helpful if patients have poor nutrition (eg, liver problems, low protein).

If no additional medical problems are present, patients can eat a regular diet.

Activity

Maintain sobriety.

Patients who are not a danger to themselves or others, are not gravely disabled, and are medically stable can maintain routine activities.

#### **4.5.6 Medications**

If psychosis or delirium is present, use an antipsychotic such as risperidone or haloperidol and/or an anticonvulsant such as carbamazepine. Avoid benzodiazepines because they may worsen respiratory depression.

*Antipsychotics*

Reduce psychosis and aggressive behaviour. All antipsychotics may be equally efficacious, but their adverse effect profiles are different. The atypical antipsychotics such as risperidone, olanzapine, quetiapine, and ziprasidone have an advantage in the adverse effect profile, especially with their lower risk to cause adverse extrapyramidal effects and tardive dyskinesia.

#### **4.5.7 Prognosis**

Psychotic symptoms induced by substance intoxication usually subside once the substance is eliminated. Symptoms persist depending on the half-life of the substances

(i.e., how long it takes the before the substance is no longer present in an individual's system). Symptoms, therefore, can persist for hours, days, or weeks after a substance is last used.

### 4.5.8 Prevention

There is very little documented regarding prevention of substance-induced psychotic disorder. However, abstaining from drugs and alcohol or using these substances only in moderation would clearly reduce the risk of developing this disorder. In addition, taking medication under the supervision of an appropriately trained physician should reduce the likelihood of a medication induced psychotic disorder. Finally, reducing one's exposure to toxins would reduce the risk of toxin-induced psychotic disorder.

#### Self Assessment Questions

1) Discuss the various treatment approaches to substance induced psychotic disorder.

.....  
.....  
.....  
.....

2) Discuss hospitalisation and medical care as important methods of treatment of this disorder.

.....  
.....  
.....  
.....

3) What is the prognosis of this disorder?

.....  
.....  
.....  
.....

4) How do we prevent this substance induced psychotic disorder from manifesting?

.....  
.....  
.....  
.....

## 4.6 LET US SUM UP

Substance-Induced Psychotic Disorders may at times not resolve promptly when the offending agent is removed. Agents such as amphetamines, phencyclidine, and cocaine have been reported to evoke temporary psychotic states that can sometimes persist for weeks or longer despite removal of the agent and treatment with neuroleptic medication.

These may be initially difficult to distinguish from non-substance-induced Psychotic Disorders.

The essential features of Substance-Induced Psychotic Disorder are prominent hallucinations or delusions that are judged to be due to the direct physiological effects of a substance (i.e., a drug of abuse, a medication, or toxin exposure). Hallucinations that the individual realises are substance induced are not included here and instead would be diagnosed as Substance Intoxication or Substance Withdrawal with the accompanying specifier.

With Perceptual Disturbances. The disturbance must not be better accounted for by a Psychotic Disorder that is not substance induced. The diagnosis is not made if the psychotic symptoms occur only during the course of a delirium. This diagnosis should be made instead of a diagnosis of Substance Intoxication or Substance Withdrawal only when the psychotic symptoms are in excess of those usually associated with the intoxication or withdrawal syndrome and when the symptoms are sufficiently severe to warrant independent clinical attention.

A Substance-Induced Psychotic Disorder is distinguished from a primary Psychotic Disorder by considering the onset, course, and other factors. For drugs of abuse, there must be evidence from the history, physical examination, or laboratory findings of Dependence, Abuse, intoxication, or withdrawal.

Substance Induced Psychotic Disorders arise only in association with intoxication or withdrawal states but can persist for weeks, whereas primary Psychotic Disorders may precede the onset of substance use or may occur during times of sustained abstinence. Once initiated, the psychotic symptoms may continue as long as the substance use continues.

Another consideration is the presence of features that are atypical of a primary Psychotic Disorder (e.g., atypical age at onset or course). For example, the appearance of delusions de novo in a person over age 35 years without a known history of a primary Psychotic Disorder should alert the clinician to the possibility of a Substance-Induced Psychotic Disorder. Even a prior history of a primary Psychotic Disorder does not rule out the possibility of a Substance-Induced Psychotic Disorder.

It has been suggested that 9 out of 10 nonauditory hallucinations are the product of a Substance-Induced Psychotic Disorder or a Psychotic Disorder Due to a General Medical Condition. In contrast, factors that suggest that the psychotic symptoms are better accounted for by a primary Psychotic Disorder include persistence of psychotic symptoms for a substantial period of time (i.e., a month or more) after the end of Substance Intoxication or acute Substance Withdrawal; the development of symptoms that are substantially in excess of what would be expected given the type or amount of the substance used or the duration of use; or a history of prior recurrent primary Psychotic Disorders.

Other causes of psychotic symptoms must be considered even in a person with Intoxication or Withdrawal, because substance use problems are not uncommon among persons with (presumably) non-substance induced Psychotic Disorders. Psychotic symptoms induced by substance intoxication usually subside once the substance is eliminated. Symptoms persist depending on the half-life of the substances (i.e., how long it takes the before the substance is no longer present in an individual's system). Symptoms, therefore, can persist for hours, days, or weeks after a substance is last used. There is very little documented regarding prevention of substance-induced psychotic disorder. However, abstaining from drugs and alcohol or using these substances

only in moderation would clearly reduce the risk of developing this disorder. In addition, taking medication under the supervision of an appropriately trained physician should reduce the likelihood of a medication-induced psychotic disorder. Finally, reducing one's exposure to toxins would reduce the risk of toxin-induced psychotic disorder.

---

## 4.7 UNIT END QUESTIONS

---

- 1) Define and describe substance induced psychotic disorders.
- 2) Discuss how substance induced disorder can be caused?
- 3) Define subtypes of substance induced psychotic disorder?
- 4) What are the causes of these disorders?
- 5) Discuss critically the various treatments available for this disorder.

---

## 4.8 SUGGESTED READINGS

---

American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*. 4th edition, text revised. Washington, DC: American Psychiatric Association, 2000.

Kaplan, Harold I., M.D., and Benjamin J. Sadock, M.D. *Kaplan and Sadock's Synopsis of Psychiatry: Behavioral Sciences, Clinical Psychiatry*. 8th edition. Baltimore: Williams and Wilkins, 2002.

### References

American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR)*. 4<sup>th</sup> ed. Washington, DC: APA Press; 2000:257-64.

Balster RL. Neural basis of inhalant abuse. *Drug Alcohol Depend*. Jun-Jul 1998;51(1-2):207-14.

Azar S, Ramjani A, Van Gerpen JA (April 2005). "Ciprofloxacin-induced chorea". *Mov. Disord*. **20** (4): 513-4; author reply 514..

Bergman, K. R.; C. Pearson, G. W. Waltz, and R. Evans III month=December (1980). "Atropine-induced psychosis. An unusual complication of therapy with inhaled atropine sulfate". *Chest* **78** (6): 891-893.

Brady, K. T.; R. B. Lydiard, R. Malcolm, and J. C. Ballenger (December 1991). "Cocaine-induced psychosis". *Journal of Clinical Psychiatry* **52** (12): 509-512. 117-9.

Cargiulo T (March 2007). "Understanding the health impact of alcohol dependence". *Am J Health Syst Pharm* **64** (5 Suppl 3): S5-11.

Cerimele JM, Stern AP, Jutras-Aswad D (March 2010). "Psychosis following excessive ingestion of energy drinks in a patient with schizophrenia". *The American Journal of Psychiatry* **167** (3): 353.

Cheong R, Wilson RK, Cortese IC, Newman-Toker DE. Mothball withdrawal encephalopathy: case report and review of paradichlorobenzene neurotoxicity. *Subst Abus*. Dec 2006;27(4):63-7.

- Deas D, Brown ES. Adolescent substance abuse and psychiatric comorbidities. *J Clin Psychiatry*. Jul 2006; 67(7):e02.
- Hall, RC; Popkin, MK; Stickney, SK; Gardner, ER (1979). "Presentation of the steroid psychoses". *The Journal of nervous and mental disease* **167** (4): 229–36.
- Hansson O, Tonny B. [Serious Psychological Symptoms Caused by Clonazepam.] *Läkartidningen*.
- Marsepoil T, Petithory J, Faucher JM, Ho P, Viriot E, Benaiche F (1993). "[Encephalopathy and memory disorders during treatments with mefloquine]" (in French). *Rev Med Interne* **14** (8): 788–91.
- Maxwell JC. Deaths related to the inhalation of volatile substances in Texas: 1988-1998. *Am J Drug Alcohol Abuse*. Nov 2001;27(4):689-97.
- McGarvey EL, Clavet GJ, Mason W, Waite D. Adolescent inhalant abuse: environments of use. *Am J Drug Alcohol Abuse*. Nov 1999;25(4):731-41.
- Meadows R, Verghese A. Medical complications of glue sniffing. *South Med J*. May 1996;89(5):455-62.
- Misra LK, Kofoed L, Fuller W. Treatment of inhalant abuse with risperidone. *J Clin Psychiatry*. Sep 1999; 60(9):620.
- Moore TH, Zammit S, Lingford-Hughes A, *et al.* (July 2007). "Cannabis use and risk of psychotic or affective mental health outcomes: a systematic review". *Lancet* **370** (9584): 319–28.
- Muilenburg JL, Johnson WD. Inhalant use and risky behaviour correlates in a sample of rural middle school students. *Subst Abus*. Dec 2006;27(4):21-5.
- National Institute on Drug Abuse. Inhalant Abuse Research Report. 2005.
- Pétursson H (November 1994). "The benzodiazepine withdrawal syndrome". *Addiction* **89** (11): 1455–9..
- Phillips-Howard PA, ter Kuile FO (June 1995). "CNS adverse events associated with antimalarial agents. Fact or fiction?". *Drug Saf* **12** (6): 370–83.