Clinical Practice Guidelines for Assessment and Management of Patients with Substance Intoxication Presenting to the Emergency Department

Siddharth Sarkar, Gayatri Bhatia[1], Anju Dhawan
Department of Psychiatry and National Drug Dependence Treatment Centre (NDDTC), All India Institute of Medical Sciences (AIIMS), New Delhi, [1]Department of Psychiatry, All India Institute of Medical Sciences (AIIMS), Rajkot, Gujarat, India
E-mail: sidsarkar22@gmail.com
Submitted: 24-Jul-2022, **Revised:** 15-Dec-2022, **Accepted:** 19-Dec-2022, **Published:** 30-Jan-2023

INTRODUCTION

The International Statistical Classification of Diseases and Related Health Problems, revision 10 (ICD-10) describes intoxication as "a transient condition following the administration of alcohol or other psychoactive substance, resulting in disturbances in level of consciousness, cognition, perception, affect or behavior, or other psychophysiological functions and responses."[1] Intoxication is generally an acute phenomenon, the intensity and effects of which wear off with time and disappear completely in the absence of further use of the substance.

While most episodes of intoxication do not need medical attention, intoxicated patients may sometimes present to the emergency department.[1] The reasons for seeking medical attention may either be due to the substance use itself (e.g., extreme agitation or violent behavior that may endanger the patient or others around them) or due to an adverse consequence of substance use (e.g., head injury in a road traffic accident that occurred due to driving while intoxicated).

Common substances of intoxication encountered in the emergency setting in India are alcohol, cannabis, opioids, and benzodiazepines. Cases of intoxication from other substances like inhalants, stimulants, hallucinogens, and newer psychoactive substances including synthetic cannabinoids and club drugs may also present to the emergency unit. Often the substance of intoxication may be unknown or falsely reported due to fear of legal ramifications or there may be use of more than one intoxicating substance, thereby complicating the clinical picture. Patients may present with decreased levels of consciousness, vomiting, seizures, or other symptoms that may resemble other medical or surgical emergencies. It is, thus, imperative that psychiatrists attending to patients in the emergency department be well-versed with identification, assessment, and management of patients with substance intoxication.[2]

Caring for intoxicated patients in the emergency department comes with various other issues that require a psychiatrist's time and effort. These patients may be brought into the emergency department against their wishes and refuse medical care. They may also be brought in for medical attention by law enforcement authorities with no available identification details and reliable history or even in association with an alleged crime or illegal activity, making it essential for the emergency care provider to be competent in dealing with the medicolegal aspects of intoxication and providing optimum medical services to the patient along with safeguarding the legal procedures. The present clinical practice guidelines deal with the assessment and management of patients with substance intoxication presenting to the emergency department. The guidelines present the general considerations while attending to a substance intoxicated patient, followed by general signs of intoxication. Thereafter, details of intoxication with specific substances are discussed, namely, alcohol, cannabis, opioids, benzodiazepines, and other substances. Features of intoxication, assessment, and management are discussed for each of these substances. Multiple substance intoxication is also discussed in the guidelines. Special populations are referred to in the guidelines, including children and adolescents, women, and the elderly population. The guidelines do not cover nicotine or caffeine intoxication (these are unlikely to be encountered in a clinical setting). Accidental ingestion of substances of use is not catered to in these guidelines. We also do not go into details of intoxication presenting with additional psychiatric and/or medical illnesses and each such case is likely to be unique with its own specific constraints and challenges in management.

General considerations while attending to a substance intoxicated patient

Patients with intoxication with a substance of abuse present several challenges during assessment and management [Figure 1]. One of the foremost concerns is the potential unreliability of history. Patients with substance intoxication may give inaccurate or unreliable history. This may be partly attributable to patients trying to minimize their substance use, not recollecting details adequately

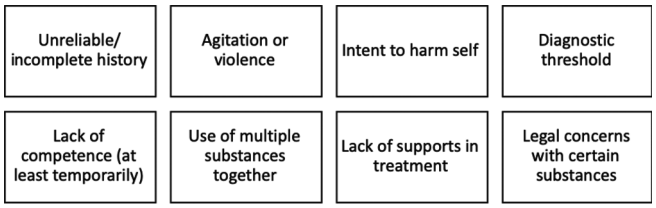

Figure 1: Challenges in assessment and management of patients with substance intoxication

due to cognitive impact of the substance, concealment of the details of substance use from the family, or avoiding sharing details to prevent legal ramifications. Thus, multiple sources of information can be referred to obtain a more comprehensive account of the patient's condition. Friends, family, and previous treatment records can be useful sources of collateral information about the patient. In some circumstances, physical examination and mental status examination of an uncooperative patient can be helpful to get a clearer clinical picture of the patient (e.g., injection track marks can hint at opioid overdose in an otherwise comatose patient).

Another challenge that comes across in patients with intoxication is the occurrence of agitation or violence. Some of the intoxications with substances like alcohol and stimulants like cocaine may be associated to aggression. Aggression may be due to disinhibition and impaired judgement associated with substance use. Furthermore, substance use disorder may be associated with other psychiatric or medical illnesses that may individually contribute to the state of agitation or aggression. Addressing aggression promptly is required to prevent harm to the self and others. Other relevant guidelines of the Indian Psychiatric Society may be referred to while addressing aggression and violence when patients with substance intoxication present to the emergency department.

A related issue is the consumption of substances or presentation with substance intoxication when the patient intends to kill themself. This may be a presenting feature in patients with overdose of opioids or sedative-hypnotics. Sometimes, patients may also consume large amounts of alcohol when they have an intent to die. Thus, self-harm should be considered as a possibility when patients present with substance intoxication, and suitable assessment measures should ascertain risk to self and the presence of concurrent psychiatric disorder. If required, additional treatment should be instituted for the patient.

A relevant aspect of consideration is to determine the line between simply the use of a substance or substance intoxication. Description in the ICD-11 mentions substance intoxication as occurrence of "clinically significant disturbances in consciousness, cognition, perception, affect, behavior, or coordination that develop during or shortly after the consumption or administration."[3] Hence there is a leeway for the clinician to determine what is considered as "clinically significant". One way to simply operationalize is to consider any clinical encounter with a patient having a recent history of substance use which has resulted in the abovementioned mental or neuropsychiatric disturbances and are brought to the emergency/clinical setting as "clinically significant" (those situations where these disturbances are expected by the person and are found to be pleasurable would be considered simply as use). The disturbances are described as transient and reversible, and hence they are expected to abate with time.

Patients with substance intoxication may have an issue related to their mental competence. Substance use may result in impairment of judgement or consciousness. This may result in impairment of competence, that is, the ability of the person to comprehend choices, decide a course of action, and communicate their choice back. This lack of competence has a bearing on treatment choices that should be instituted and promulgation of coerced treatment. It is generally accepted that when a person is not found to be competent, the nominated representative can be the proxy decisionmaker for the person. The treatment providers can also institute emergency treatment in the best interests of the patient. Furthermore, substance intoxication is a reversible process, so if emergency treatment is not required, then one can wait for the patient to re-attain competence as the substance intoxication wanes.

A clinical consideration for patients with substance use disorders is the concurrent use of many substances together. This may lead to the clinical picture being altered or complicated by features of intoxication or withdrawal from different substances. For example, a patient with opioid dependence may experience sedation during intoxication. If benzodiazepines or alcohol are used concurrently with opioids, then the sedation may be accentuated. In such a patient, reversal using naloxone may offset the features of intoxication from opioids, but not reverse the effects of benzodiazepines. Similarly, intoxication from cocaine and other stimulants may lead to paranoia, which may be accentuated by the consumption of higher than usual amounts of cannabis. Thus, a clinician needs to be open to the idea of multiple substance consumption in a patient with substance intoxication.

Another issue in the clinical management of patients with substance intoxication in the emergency setting is the potential lack of social support in the treatment process. Patients may be consuming substances alone, or it is possible that casual acquaintances do not intend to help or are not in a position to help (due to their own intoxication as well). Family and friends may be disinclined or burnt out due to the substance use disorder and hence may not be forthcoming in engaging with the care process. Thus, the ancillary supports

available in the treatment process of patients with substance intoxication may be few. Sometimes, police or other bystanders may bring a patient with substance intoxication to the emergency unit and the identity of the patient may be unknown to them. Thus, clinicians may have to work with limited information on occasions.

There may be legal concerns with the consumption of certain substances considered illegal under the Narcotic Drugs and Psychotropic Substances Act, 1985. This may make patients hesitant to disclose use of some of the substances; for example, heroin. Treating psychiatrists might also be apprehensive about documentation. However, it should be reiterated that clinicians can help patients better if they are able to get a reliable history of the patient. Thus, it would be preferable to gather detailed information and document suitably while ensuring confidentiality of the treatment records and providing reassurance about this to the patient. It might also be prudent to perform urine or blood testing for substance abuse, ensuring a safe chain of custody of the sample. It is unlikely that such treatment records are referred to by the legal process, but a psychiatrist may need to present the relevant information to courts when requested through due processing.

General signs of intoxication

As specified in the ICD-11,[3] intoxication from one or more psychoactive substances may be suspected in cases where the following features are present:

1. Transient, but clinically significant disturbances occur in consciousness, coordination, perception, cognition, affect, or behavior that develop during or shortly after the consumption/administration of the substance(s)
2. The symptoms are in accordance with the known pharmacological effects of the substance. The intensity of the symptoms is closely related to the amount of substance consumed/administered.
3. The symptoms are time-limited and subside as the substance is cleared away from the body.
4. The symptoms cannot be better explained by another medical condition or another psychiatric disorder.

Table 1 enumerates signs and symptoms of intoxication with different substances.

General management of intoxicated patients in the emergency setting

As mentioned earlier, patients presenting with intoxication may prove challenging to manage. Intoxicated behavior may often be confused with other disease conditions and vice versa. A brief outline on general management of a patient presenting with intoxication is given in Figure 2.

ALCOHOL INTOXICATION IN THE EMERGENCY SETTING

Alcohol (primarily) is a widely used psychoactive substance globally and in India. In people aged 20–39 years, approximately 13.5% of global deaths are attributable to alcohol. More than 200 disease and injury conditions are related to alcohol use. Data from the National Syndromic Surveillance Program of United States, which included non-fatal emergency department visits from facilities in 49 states and Washington, DC, indicated that in 2020 1.8% of the total annual emergency visits were related to alcohol use.

Of the many alcohol related disorders presenting to the emergency department in India, a vast majority presents with road traffic accidents due to driving under intoxication followed by acute alcohol poisoning, which is defined as ingestion of a large amount of alcohol in a short duration of time.[4]

Table 1: Features of intoxication with common psychoactive substances

Substance	Signs	Dysfunctional Behaviors
Alcohol	Unsteady gait, slurred speech, nystagmus, flushed face, conjunctival injection, decreased levels of consciousness	Disinhibition, argumentativeness, aggression, inattention, lability of mood, impaired judgement and functioning
Cannabis	Increased appetite (munchies), dry mouth, tachycardia, conjunctival injection	Euphoria, disinhibition, suspiciousness, anxiety, agitation, sense of slowing of time, rapid flow of ideas, inattention, slow reaction time, hallucinations and illusions, impaired judgement
Opioids	Slurred speech, drowsiness, constricted pupils, decreased levels of consciousness	Sedation, apathy, disinhibition, psychomotor retardation, inattention, impaired judgement and functioning
Benzodiazepines	Unsteady gait, slurred speech, nystagmus, flushed face, conjunctival injection, decreased levels of consciousness, erythematous skin lesions or blisters, hypothermia, hypotension, depressed gag reflex	Euphoria, apathy, disinhibition, sedation, lability of mood, aggression, inattention, anterograde amnesia, impaired psychomotor functioning
Stimulants (including cocaine)	Tachycardia, arrhythmias, hypertension, sweating and chills, nausea, vomiting, psychomotor agitation, dilated pupils, chest pain, muscle weakness, convulsions	Euphoria, increased energy, hypervigilance, ideas of grandiosity, aggression, lability of mood, suspiciousness, hallucinations and illusions
Hallucinogens	Tachycardia, sweating and chills, palpitations, tremors, blurring of vision, pupillary dilatation, incoordination	Anxiety, fearfulness, illusions and hallucinations, suspiciousness, lability of mood, hyperactivity, impulsivity, inattention
Volatile solvents	Unsteady gait, nystagmus, slurred speech, decreased levels of consciousness, muscle weakness, blurred vision, diplopia	Apathy, lethargy, aggression, lability of mood, impaired attention and memory, psychomotor retardation

Clinical features of alcohol intoxication

Alcohol is a global central nervous system (CNS) depressant. Acute ingestion generally results in elevation of mood, disinhibition, and increased confidence, leading to argumentative or combative behavior. In addition to those mentioned in Table 1, some features of alcohol intoxication seen with increasing blood alcohol concentration (BAC) are discussed in Table 2. In naïve drinkers, BAC of 150–250 mg per 100 ml result in clinically apparent intoxication; BAC of 350 mg per 100 ml cause stupor and coma; while levels

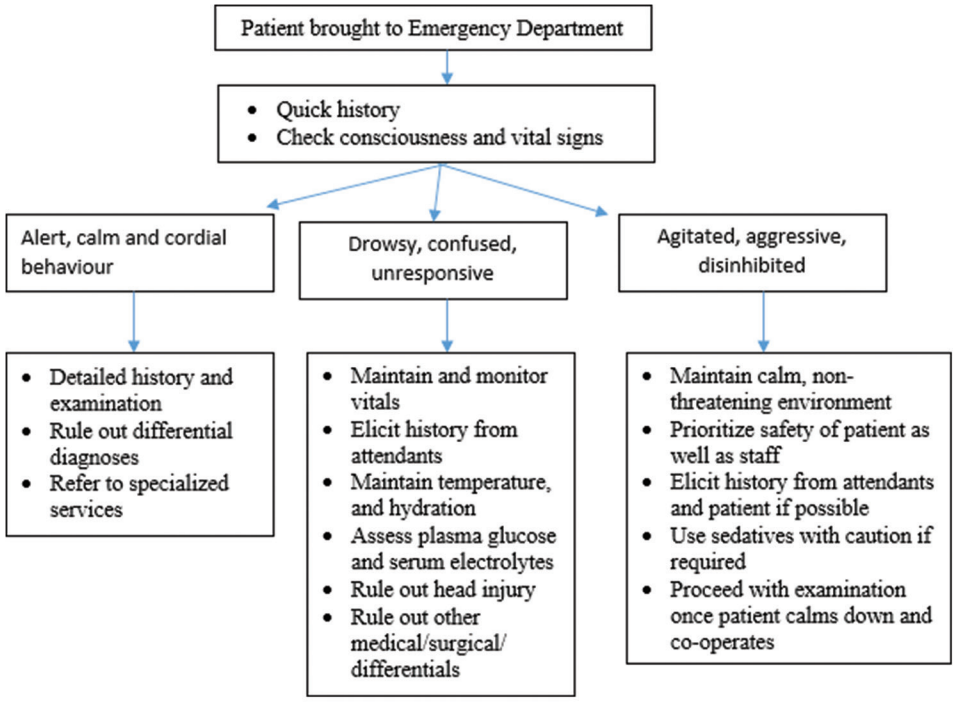

Figure 2: General management of intoxicated patients in an emergency setting

Table 2: Effects of increasing blood alcohol concentration

Stage	BAC (mg per 100 ml)	Clinical Features
Reduced awareness, information processing and visual acuity	10-100	Higher self confidence Shortened attention span Poor judgment Impulsiveness
Reduced muscle coordination	100-180	Poor judgment Delayed reaction time Incoordination Lack of concentration, impaired recent memory Blurry vision, delayed glare recovery Reduction in perceived sensation (hearing, tasting, feeling, seeing)
Confusion	180-250	Incoordination or staggered gait Slurred speech Confusion, disorientation to time and place Emotional lability Sedation
Stupor	250-350	Difficulty in moving Weak response to stimuli, if at all Nausea, vomiting May lapse in and out of consciousness
Coma	350-450	Unconscious Reflexes depressed Fixed pupils Hypothermia Breathing is slower and more shallow Bradycardia Arrhythmias may be precipitated (holiday heart syndrome) May result in death

more than 450 mg per 100 ml can be fatal. Regular users of alcohol often develop tolerance and are significantly less likely to manifest symptoms/signs of intoxication at the same BAC than non-regular drinkers.[5] Effects can last from 2 to 3 hours after a few drinks to up to 24 hours after heavy drinking.

Assessment of alcohol intoxication

An asssessment of a patient presenting with alcohol intoxication aims at identifying the immediate risks to the patient and attendants and uncovering maladaptive patterns of alcohol use that may require specialized management and care. Acute alcohol intoxication may result in several metabolic abnormalities, like hypoglycemia, lactic acidosis, hypokalemia, hypomagnesemia, hypophosphatemia, and hypocalcemia. Thus, these may be required on an urgent basis. Alcohol can cause acute effects on the cardiovascular system, such as atrial and ventricular tachy-dysrhythmias. Hence, an urgent electrocardiogram (ECG) may be required. Further discussed are the assessment measures for alcohol intoxication:

1. *Clinical history*
    a. Elicit details of current episode of alcohol use: amount, preparation, duration, mixing with other substances, etc.
    b. Ask for similar details about previous drinking episodes.
    c. Elicit, wherever possible, events of high-risk behavior under intoxication: driving, operating heavy machinery, self-harm, or violence toward others.
    d. Attempt should be made, wherever possible, to identify alcohol dependence or harmful use pattern.
2. *Physical Examination*
    a. Assess levels of consciousness (the Glasgow Coma Scale may be used), cardiac and respiratory parameters (heart rate, blood pressure, cardiac rhythm, respiratory rate), and urine output, if possible, with hourly intervals until parameters begin to normalize.
    b. Unresponsive patients may suffer from an occult head injury that may be identified from increased intracranial pressure. It is thus advised to perform a direct ophthalmoscopy looking for papilledema, which is a clinical sign for increased intracranial pressure. Papilledema without increased intracranial pressure may also be seen in methyl alcohol poisoning. Thus, imaging (CT/MRI) may be required to determine definitive management.
    c. In responsive patients, rule out diplopia and assess eye movements in all cardinal positions, any muscle weakness, and sensory deficits.
    d. Observe for any abnormal or involuntary movements.
    e. Check for other physical injuries and bleeding from the ear, nose, or mouth.
3. *Mental status examination*
    a. Assess for speech and behavioral abnormalities; pay special attention to aggressive behaviors, and ensure patient and staff safety.
    b. Assess thought and perceptual disturbances.
    c. Assess orientation to time and place: immediate, recent, and remote memory, insight, and reality testing.

Rule out other causes of altered sensorium:

1. Metabolic causes such as hypoglycemia, electrolyte imbalance, hyperosmolar hypoglycemic state, diabetic ketoacidosis, and metabolic acidosis may be detected by laboratory investigations including blood glucose, renal function tests, and arterial blood gases.
2. Cerebral trauma, cerebrovascular events, and meningitis may be identified by computed tomography (CT), magnetic resonance imaging (MRI), and cerebrospinal fluid (CSF) analysis.
3. Encephalopathies and toxicity from other substances (methanol, lithium, barbiturates, benzodiazepines, and isoniazid) may be identified through laboratory investigations for serum ammonia, and levels of suspected agents in the blood. Higher serum levels than the therapeutic window indicates toxicity.

The abovementioned assessments and investigations are based on individual case considerations and clinical suspicion.

MANAGEMENT OF ALCOHOL INTOXICATION IN THE EMERGENCY SETTING

Individuals with some symptoms of alcohol intoxication (mild and moderate cases, i.e., without impairment of consciousness or significant medical issues) can be managed in relatively simple surroundings without much medical intervention. Those who are severely intoxicated should be admitted and further managed in a setting where high-dependency or intensive care can be provided.[4,6]

Treatment for acute alcohol toxicity is largely supportive. The first priority is airway protection and maintenance of breathing as respiratory depression due to alcohol intoxication may result in death. Alcohol acts as a diuretic; thus, patients with signs of dehydration (dry lips and mucosae and poor urine output) may be provided with intravenous fluids. Checking glucose is important, as many individuals with alcohol use disorder may have depleted glycogen stores. Hypoglycemia needs to be corrected with 5% dextrose intravenously.

Routine use of vitamins is not necessary for all cases of alcohol intoxication. However, thiamine supplementation is needed for patients with alcohol dependence to prevent the occurrence of Wernicke encephalopathy. Thus, prophylactic

thiamine may be administered to patients who appear at risk of developing thiamine deficiency (prolonged use of alcohol, poor nutritional status, confused mental state, gait abnormalities, and ophthalmoplegia).[7] Usual dose should be at least 250 mg of thiamine daily intramuscularly for 3–5 days, followed by oral thiamine 100 mg daily.[8] It is important to remember that in an emergency setting, thiamine is to be administered before glucose replenishment so that the glucose is utilized in ATP generation (which utilizes thiamine as a co-factor), preventing sequestration of the already limited thiamine which may precipitate Wernicke's encephalopathy.

A brief schematic flowchart for management of alcohol intoxication in the emergency setting is presented in Figure 3.

1. *General management*
   a. Maintain airway, breathing, and circulation.
   b. Provide intravenous fluids to counter dehydration and maintain urine output.
   c. Hypoglycemia should be corrected with oral glucose, if conscious level permits, or else with 5% or 10% intravenous (IV) dextrose.
   d. Maintain ambient room temperature, with quiet surroundings and minimal disturbance.
   e. At least one electrocardiogram (ECG) should be obtained for all heavily intoxicated patients and for those with known cardiovascular conditions. "Holiday heart syndrome" characterized by new-onset arrhythmias/atrial fibrillation can occur following alcohol ingestion. Serial ECG monitoring should be done if arrhythmia is detected. As intoxication abates, ECG changes should resolve, but if the changes persist an alternate cause should be considered.
   f. In the case of altered mental status, when a full history cannot be elucidated from the patient, a CT scan of the head can be considered for detecting intracranial pathology contributing to the patients'

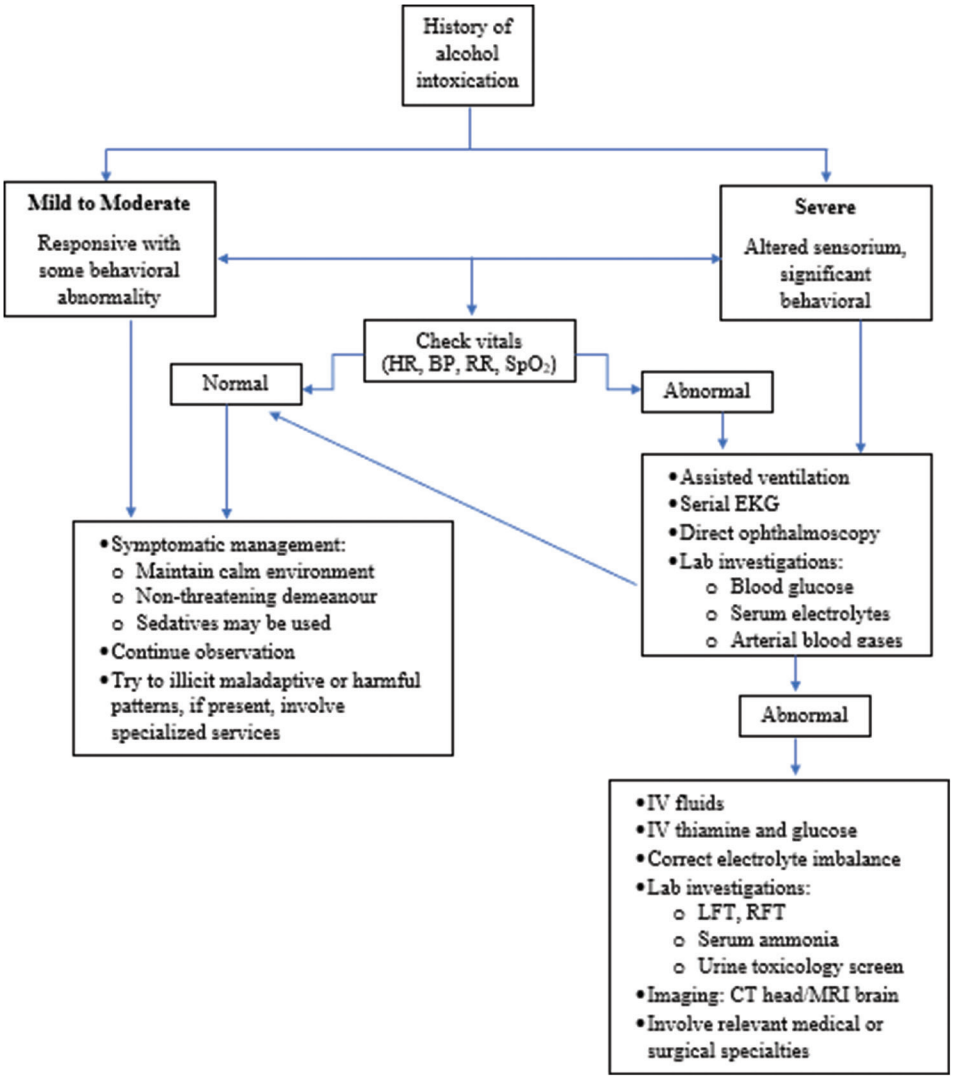

Figure 3: Management of alcohol intoxication in an emergency setting

mental status (e.g., subdural hematoma). MRI can also be considered for select cases.

g. If suicidality is expressed, then psychiatric evaluation should be considered.

2. *Laboratory investigations*
   a. Blood glucose, plasma electrolytes, and blood gases should be measured as frequently as possible in patients with altered sensorium until recovery is assured.
   b. Urine toxicology may be performed, if needed, to check for presence of narcotics and sedatives, if suspected.
   c. Complete blood counts can be done to detect megaloblastic anemia.
   d. Liver function tests should be done when prolonged harmful pattern of alcohol use is suspected.
   e. Renal function tests should be done in cases of altered sensorium, poor urine output, or if behavioral features are out of proportion to the amount of alcohol consumed.
   f. Blood alcohol levels may be required in medicolegal cases when reliable history is not available or when behavioral features are out of proportion to the amount of alcohol consumed.
   g. Whole blood thiamine levels may be measured in patients at risk of or suspected to develop Wernicke's encephalopathy.
3. *Symptomatic management*
   a. Control aggression by adopting a concerned and non-threatening demeanor.
   b. Sedatives should be used judiciously to avoid over-sedation.
   c. Metadoxine (given as a single IV/intramuscular [IM] injection of 300–600 mg) may be used to accelerate the elimination of alcohol in adults leading to faster recovery from intoxication.
   d. In cases of agitation or violence, antipsychotics (haloperidol 5 mg with promethazine 50 mg) should be considered.

In-patient admission of a patient with alcohol intoxication can be considered when there is severe intoxication, medical complications such as Wernicke's encephalopathy, alcoholic hepatitis, dysrhythmias or convulsions, persistent disorientation, continued abnormality in cardiopulmonary parameters, known chronic systemic illnesses that require medical attention independently, prolonged aggressive behavior, or perceptual abnormalities. The specialty under which the patient needs to be admitted can be determined according to the indication for admission.

CANNABIS INTOXICATION IN THE EMERGENCY SETTING

Cannabis is the most common illicit substance of abuse in India. Cannabis intoxication sometimes presents to the emergency setting after consumption (either inhalational or oral) of high amounts of cannabis. It usually presents in those who have never tried cannabis before and experience severe psychiatric or medical manifestation of cannabis consumption. Sometimes, regular cannabis users may also experience symptoms and signs of cannabis intoxication when they are introduced to a cannabis product of higher potency.

Cannabis intoxication manifests with several symptoms as mentioned in Table 3.[9] There can be several physical symptoms of cannabis intoxication. These include tachycardia, tachypnea, increased blood pressure, dry mouth, nystagmus, increased appetite, and, rarely, precipitation of arrhythmias, angina, or myocardial infarction. Rarely, deep inhalation or breath holding may lead to pneumomediastinum or pneumothorax. Marked perceptual and mental status changes can be observed in cases of cannabis intoxication. These can include alteration in perception of time, with the perceived time being faster than clock time. Music is perceived as more engrossing and colors may appear brighter. There may be hallucinations, primarily auditory ones. There can be a sense of depersonalization. One may become more self-conscious, and may manifest paranoid thinking or delusions (persecutory, referential, or grandiose). Cannabis intoxication affects cognition and psychomotor performance as well. There may be motor incoordination and impaired attention and concentration. Judgment may be impaired due to cannabis intoxication.

The cognitive and psychomotor features of intoxication may not be immediately apparent and may manifest up to three hours after consumption of the cannabis product. This may lead novice users to consume higher amounts and experience dysphoria, anxiety, perceptual alterations, and

Table 3: Features of cannabis intoxication

Tachycardia
Increased blood pressure, or rarely, orthostatic hypotension
Conjunctival injection (reddening of eyes)
Dry mouth
Increased appetite
Nystagmus
Increased respiratory rate
Rarely arrhythmias, angina, or myocardial infarction
Rarely pneumomediastinum and pneumothorax caused by deep inhalation or holding the breath
Changes in mood: euphoria, dysphoria or anxiety
Perceptual changes: color and music perception altered
Time perception may be distorted
Distorted spatial perception
Hallucinations
Depersonalization
Delusions or paranoid thinking
Impaired attention and concentration
Slowed reaction time
Impaired motor coordination
Impaired judgement

cognitive changes to a higher than anticipated extent. These features of intoxication may last even for 12 to 24 hours after the consumption of cannabis due to accumulation in the adipose tissue and gradual release afterwards.

Assessment of patients with cannabis intoxication

The assessment of cannabis intoxication is through elaboration of the history and conduct of the examination, supplemented with urine drug screening. Patients presenting to the emergency department with panic attacks or psychotic symptoms after cannabis usage can describe their psychopathology. Attempts should be made to assess the consumption of cannabis products prior to occurrence of such symptoms. Sometimes, friends and family members can provide corollary information. A physical examination that reveals bilateral conjunctival injection without itchiness or pain may indicate cannabis intoxication. A high degree of suspicion may be necessary as the patient may not be forthcoming with proper history, fearing legal or social repercussions.

Urine enzyme-linked immunodorbet assay (ELISA) tests might provide objective information about consumption of cannabis, as cannabis remains in the body and is excreted in the urine for at least three days in infrequent consumers and for an even longer duration for regular users. One has to be cautious about urine false positives for cannabis due to efavirenz and non-steroidal anti-inflammatory drugs (NSAIDS) such as ibuprofen and naproxen.

Differential diagnosis of cannabis intoxication may include intoxication with other substances of use like cocaine, lysergic acid diethylamide (LSD), MDMA (ecstasy), amphetamines, and synthetic cannabinoids. When a patient presents with psychiatric symptoms like hallucinations, delusions, or panic attacks, one should evaluate for the exacerbation of a preexisting psychiatric illness like schizophrenia, acute and transient psychotic disorder, or panic disorder.

Management of cannabis intoxication in the emergency setting

Management of cannabis intoxication in the emergency setting can be initiated with placing the patient in a dimly lit space, reassuring them, and decreasing stimulation. In most cases, the intoxication would fade in a few hours. The patient may be given benzodiazepine orally if the patient is accepting the medication orally. Clonazepam 0.5 mg or lorazepam 1 mg can be given in such a situation.

If the patient is agitated or violent, then appropriate measures should be taken for the management of agitation or violence. This may include use of antipsychotics (like haloperidol 5 mg with promethazine (Phenergan) 25 mg, given intravenously or intramuscularly), or cautious and limited use of restraints.

In cases of chest pain, the patient should be evaluated for cardiac or pulmonary etiological causes. These may focus on myocardial infarction, angina, arrhythmia, pneumothorax, or pneumomediastinum, or evaluation of exacerbation of asthma. ECG or X-rays coupled with referral to cardiologists/pulmonologists or medicine specialists would be useful.

Once the patient recovers from cannabis intoxication, they should be debriefed and offered counseling, providing information about harms associated with cannabis use. If a cannabis use disorder is identified (harmful use or dependence), then the patient should be suitably referred for further treatment of substance use disorder.

OPIOID INTOXICATION IN THE EMERGENCY SETTING

Opioids are highly dependence-producing substances. Opioids used commonly include both pharmaceutical ones (used generally in the form of medications such as methadone, buprenorphine, tramadol, and pentazocine), and non-pharmaceutical ones (generally used for recreational purposes like heroin and raw opium). Intoxication with opioids can be intentional (a patient may be taking increased amounts of opioids to experience a more intense high or as an attempt to harm oneself) or unintentional (a patient may be unable to know the potency of street heroin and hence may inject higher doses of it).

There are several risk factors for opioid intoxication or overdose that have been reported in the literature.[10] These include escalating doses of opioids, combination of opioids and sedative drugs, use of opioids after a period of cessation, and presence of comorbid conditions like HIV, depression, and liver disease.

Opioid intoxication is defined as a condition of transient and clinically significant disturbances in consciousness, perception, behavior, cognition, affect, or coordination that develop during or shortly after the consumption or administration of opioids. Presenting features include somnolence, stupor, psychomotor retardation, slurred speech, mood changes (euphoria followed by dysphoria), respiratory depression, and impaired memory and attention. Pupillary constriction is generally present. The intensity of these symptoms is related to the amount of opioids consumed, and in severe intoxication, coma may occur. These symptoms are not better accounted by the presence of another medical condition or presence of intoxication or withdrawal of another substance. Opioid intoxication can be classified as mild, moderate, or severe on the basis of the level of psychophysiological changes due to the opioids (e.g., impairment in judgement or attention), and impairment of the level of consciousness [Table 4]. Opioid overdose is a related life-threatening condition induced

Table 4: Features of opioid intoxication and opioid overdose

Opioid intoxication
Sedation/somnolence
Psychomotor retardation
Slurred speech
Euphoria, followed by dysphoria
Impaired memory and attention
Respiratory depression
Stupor
Coma
Pupillary constriction (sometimes dilatation due to severe anoxia)
Severity of opioid intoxication
Mild: Changes in psychophysiological functions and responses are apparent, with little/no disturbances in the level of consciousness.
Moderate: Changes in psychophysiological functions and responses are marked, with some changes in the level of consciousness.
Severe: Changes in psychophysiological functions are obvious, with marked changes in the level of consciousness.
Opioid overdose
Coma
Respiratory depression
Pinpoint pupils

by consumption of excess amounts of opioids, which is characterized by pinpoint pupils, unconsciousness, and respiratory depression. The features of opioid intoxication and opioid overdose are presented in Table 4. Severe opioid intoxication and opioid overdose may be clinically indistinguishable, and the clinical label of "opioid overdose" may be more suitable when dealing with patients who present to the emergency unit with respiratory depression, unconsciousness, and pinpoint pupils after recent consumption/administration of large doses of opioids. Furthermore, though generally opioid intoxication presents as euphoria followed by dysphoria, other psychological manifestations of opioid intoxications may be anxiety, agitation, depression, hallucinations, and paranoia. Some of the opioids are known to reduce the seizure threshold (like dextropropoxyphene and tramadol), and the patient may present with an episode of seizure.

Assessment for opioid intoxication

The assessment of patients with opioid intoxication aims at ensuring safety of the patient and prevention of irreversible harm to the patient. In cases of opioid intoxication/overdose, information is generally obtained from friends or family members of the patients. Information on the presence of pills or injection paraphernalia where the patient was found can be a helpful guide to understanding the consumption of opioids by the patient. The onset, duration, and the intensity of the symptoms of intoxication would vary according to the potency of the opioid and the route of administration; for example, the same doses of fentanyl, buprenorphine, and heroin are likely to present differently (symptoms are likely to be more intense for fentanyl and duration of action may be much longer for buprenorphine). Attempts should also be made to discern the use of sedative hypnotics along with opioids for a given patient. Concurrently with the assessment of the patient, emergency measures would need to be instituted for the patient (including attention to the airway, breathing, and circulation).

There are some differential diagnoses that may be considered in patients who present with features of opioid dependence. These include head injury, meningitis or encephalitis, systemic infections, hepatic or other metabolic encephalopathies, diabetic ketoacidosis or hypoglycemia, electrolyte disturbances, and hypoxia/hypercapnia due to preexisting respiratory conditions. Clinical assessment and laboratory investigations, as necessary, should be used to include or rule out other conditions.

Management of opioid intoxication in the emergency setting

Opioid intoxication presents as a medical emergency and can be fatal if the patient is not treated appropriately. The risk of death is primarily due to respiratory depression. The flowchart in Figure 4 describes the usual management of patients with opioid intoxication. It must be remarked that effective treatment options are available for the treatment of opioid intoxication in the emergency setting.[11]

The ABC of management in the emergency setting should be instituted for the patient. Airway should be made patent, and the patient may need to be intubated if they are unable to maintain the airway and saturation. Supplemental oxygen or mechanical ventilation through bag and mask may be required if the patient has low oxygen saturation (<93%) or respiratory rate is less than 8 breaths per minute. Many places have a routine practice of assessing glucose if a patient is unconscious (to detect hypoglycemia) and that may be done as per protocol.

Naloxone is a full opioid antagonist that is an important treatment agent for opioid intoxication. By acting on μ-opioid receptors, it displaces the opioid agonist and reverses the signs and symptoms of opioid intoxication. It has a short duration of action (about 60 to 90 minutes). Generally, it is administered intravenously, but for some patients, when accessing the veins is difficult, it can be administered subcutaneously, intramuscularly, endotracheally, or intranasally. It is administered in doses of 0.2 to 0.4 mg (and higher doses of 1 to 2 mg in cases of patients presenting with apnea or cardiorespiratory arrest). When patients show improvement with naloxone, the improvement occurs within two to three minutes in the form of pupillary dilatation and increase in the respiratory rate. Some patients may require higher doses to show reversal of opioid intoxication. Doses of naloxone can be repeated every two to three minutes to a maximal dose of 10 mg. After reaching reversal, higher doses should be avoided as naloxone may be associated with vomiting.

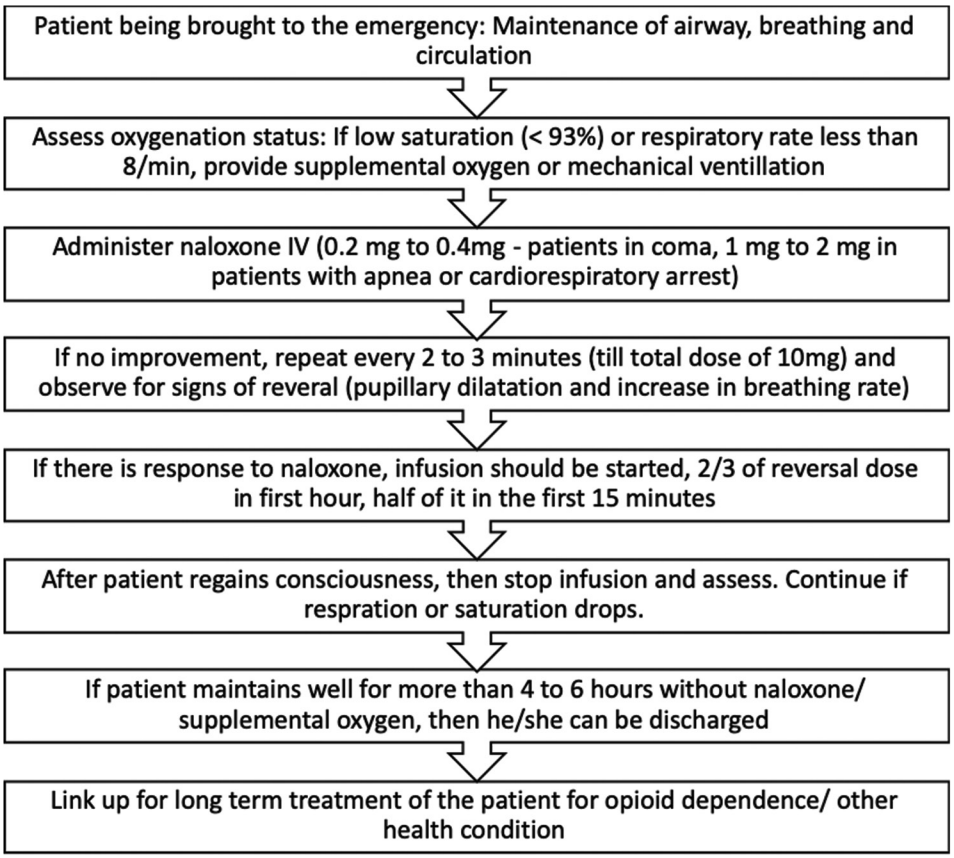

Figure 4: Management of opioid intoxication

In case of response to naloxone, intravenous infusion should be considered in patients with overdose from longer acting opioids (e.g., buprenorphine) because the patient can fall back into coma as the effect of naloxone decreases. For naloxone infusion, two-thirds of the reversal dose should be given hourly. Half of this dose should be administered over the first 15 minutes and the remaining over the next 45 minutes; for example, if the reversal dose was 1.2 mg, then the first hour dose would be 0.8 mg, and 0.4 mg would be administered through infusion in the first 15 minutes. Naloxone can be repeated intramuscularly or subcutaneously if the veins are inaccessible. After reversal and when the patient is clinically better, it is useful to observe the patient for 4 to 6 hours after naloxone infusion is stopped and before the patient is discharged.

There is a high risk of overdose again if a patient has overdosed once. Patients who have overdosed on opioids should be offered pharmacological and non-pharmacological treatment for opioid dependence. It has been seen that opioid substitution treatment with buprenorphine or methadone is associated with lower overdose-related mortality.[12] The reader is referred to the other Indian Psychiatric Society guidelines on the management of opioid dependence in the clinical population.[13]

BENZODIAZEPINE INTOXICATION IN THE EMERGENCY SETTING

Benzodiazepines are commonly prescribed medications in the clinical setting. Drugs in this group are classified as short acting (etizolam, alprazolam, and lorazepam) and long acting (diazepam, nitrazepam, and clonazepam). Benzodiazepines have several clinical applications including treatment of sleep and anxiety disorders. Benzodiazepines have been implicated in 31% of all fatal poisonings reported in the United States over the last two decades.[14] Thus, it is important that emergency care providers learn to identify and manage benzodiazepine overdose, which is defined as ingestion of any drug in the class of benzodiazepines in quantities greater than recommended.

The largest vulnerable groups to present with benzodiazepine intoxication are children, who may ingest it accidentally, and elderly, who commonly complain of insomnia and are prescribed benzodiazepines. Deteriorating metabolism and cognitive functioning may become factors responsible for accidental benzodiazepine overdose. Deliberate overdose with an intent to self-harm may also be a possibility that cannot be ignored.

Clinical features of benzodiazepine intoxication

The clinical features of benzodiazepine intoxication are dose-dependent and wear off spontaneously with small doses of shorter acting agents. Symptoms of benzodiazepine intoxication are presented in Table 5.

Assessment for benzodiazepine intoxication

Many patients with benzodiazepine intoxication are arousable and can provide information regarding their ingestion. In those patients with severe benzodiazepine intoxication who cannot provide an adequate history, a general approach should be undertaken to stabilize the patient. The aims of assessment include definitive identification of benzodiazepine intoxication along with anticipation and prevention of life-threatening risks.

1. *History*
   Elicit details on the use of the drug from family members/friends and the patient, if responsive: name, dose, duration, mode of overdose, and whether the benzodiazepines were mixed with other psychoactive substances like alcohol, cannabis, opioids, barbiturates, tricyclic antidepressants, anticonvulsants, sedating antipsychotics, or antihistamines. Attempts must be made to elicit any prior episodes of benzodiazepine intoxication, in addition to identification of tolerance, craving, withdrawal, salience, and any physical or psychological harms caused by benzodiazepines. Also ask about high-risk behaviors like driving or operating heavy machinery and a history of falls or accidents under intoxication.
2. *Physical Examination*
   Assess vital signs including pulse, respiratory rate, blood pressure, temperature, and oxygen saturation. Assess level of consciousness, preferably using the Glasgow Coma Scale. Ataxia may be present in cases of benzodiazepine intoxication.
3. *Mental status examination*
   1. General behavior: Patients usually appear sedated but responsive. Occasionally, paradoxical reaction may occur, characterized by agitation, anxiety, disinhibition, and aggressiveness.
   2. Slurring of speech, mumbling, or irrelevant talk may be present.
   3. Perceptual and thought abnormalities are rare.
   4. A detailed CNS examination is warranted, especially in elderly patients and those with known liver or renal disease, history of chronic illness, and poor general health condition.

Table 5: Features of intoxication with benzodiazepines

Initial feeling of relaxation, mild euphoria, and sexual enhancement and sedation
Large doses produce impaired judgement, motor incoordination, blurred vision, slurred speech, slowed reflexes, impaired perception of time and space, slowed breathing, and reduced pain sensitivity
Still higher doses cause confusion, unconsciousness, coma, and death

Rule out other causes of acute respiratory depression like head injury, encephalitis, hypoglycemia, hypernatremia, systemic infection, respiratory tract infection, acute cardiac event, and stroke.

Management of benzodiazepine intoxication in the emergency setting

Treatment of benzodiazepine overdose is mainly supportive. Most effects wear off in a few hours for short-acting and in 24–48 hours for long-acting benzodiazepines. However, CNS complication and cardiac and respiratory compromise may contribute to patient mortality unless managed effectively. Hence respiratory distress should be addressed first. Mechanical ventilation may be required to address respiratory compromise. The suggested management here should be considered in conjunction with other Indian Psychiatric Society Clinical Practice Guidelines (IPS CPGs) on the topic.[15]

General management

1. Maintain airway, breathing, and circulation.
2. Measures to prevent aspiration should be instituted (lateral position, suction equipment).
3. An ECG should be considered.
4. Volume expansion may be required for hypotension.
5. Correct hypothermia.
6. Repeated evaluation of neurological status and respiratory functions may be needed.

Investigations

1. Glucose testing may be considered to rule out hypoglycemia.
2. Urine toxicology screening should be carried out for benzodiazepines and other psychoactive substances.
3. Monitoring cardiac activity using ECG may be needed in many cases. ECG- abnormality of QRS or QT_c intervals should suggest co-ingestion of cardiotoxic agents.
4. A chest X-ray may be considered for comatose patients or those with respiratory compromise to rule out aspiration pneumonia.

Prevention of absorption of benzodiazepines

1. Consider gastrointestinal decontamination using a single tablet of activated charcoal via nasogastric tube in cases of heavy ingestion with intended self-harm, co-ingestion with other substances like antidepressants, and if the patient is brought less than one hour after ingestion.
2. Invasive procedures like induced emesis, gastric lavage, and bowel irrigation should be avoided.

Antidote administration

Flumazenil (a benzodiazepine receptor competitive antagonist) can reverse benzodiazepine-induced CNS impairment.[16] The dose of administration is 0.1–0.2 mg/minute intravenously over 30 seconds, which may be repeated as 0.1 mg after one-minute intervals till the patient is alert and respiration is appropriate. A maximum dose of 1–2 mg can be used. Arousal of the patient generally occurs 30–60 seconds after intravenous administration. The effect peaks after 5–10 minutes and lasts for 1–2 hours. Continuous infusion (usually 0.5–2 mg/hour) may be needed to maintain the effect and prevent re-sedation.

Slow injection (0.2 mg over 15 seconds) is recommended to avert the adverse effects associated with sudden arousal, including seizures, cardiac arrhythmias (particularly paroxysmal supraventricular tachycardia), anxiety, palpitations, nausea, and vomiting. Flumazenil is expensive and has limited availability in India and is thus not recommended for routine use. Flumazenil can be safely administered to non-habituated users of benzodiazepines but should be avoided in patients with history of seizure disorders, benzodiazepine dependence, and head injury. Use of flumazenil may be constrained by its availability.

INTOXICATION WITH OTHER SUBSTANCES

Cocaine and other stimulants

Though cocaine and other stimulants have traditionally not been commonly abused in India, their use is gradually rising, especially in bigger cities. Presentation of cocaine intoxication is in the form of euphoric mood, increased psychomotor activity, severe agitation, impaired attention, auditory hallucinations, paranoid ideation, confusion, anxiety, and hypervigilance. Some patients may manifest picking of the skin (formication). Cocaine has sympathomimetic effects and may result in hypertension, tachycardia, hyperthermia, diaphoresis, and mydriasis. Similar actions are also produced by other stimulants (like amphetamine and methamphetamine) and these last till the action of the stimulant subsides. Some patients may exoerience seizures or chest pain due to cardiac ischemic changes. An ECG or troponin T test can be done to find out changes in the cardiac functioning.

Management of cocaine or stimulant intoxication is generally symptomatic.[17] Patients can be placed in a quiet room/area, if possible. Patients can be given benzodiazepines for sympathomimetic symptoms and agitation or seizure. Benzodiazepines like lorazepam 2 mg can be given orally, intramuscularly, or intravenously, and repeated as necessary. For acute agitation and paranoia, the patient may need injectable antipsychotic on a short-term basis (though antipsychotics are not required in the absence of a concurrent psychotic disorder or stimulant/cocaine-induced psychotic disorder). Very rarely, patients may need restraints. Patients may be given IV fluids for dehydration. Aspirin and nitroglycerine are given for chest pain related to cocaine. Patients with cocaine or stimulant intoxication become asymptomatic over a period of hours to within a day. After resolution of the intoxication, the patient may be referred for treatment of the cocaine/stimulant use disorder, if present.

Hallucinogens

Several hallucinogens may cause features of intoxication, and these include LSD and phencyclidine. Symptoms of hallucinogen intoxication includes hallucinations, perceptual changes such as depersonalization and derealization, illusions, synesthesia, affective changes like anxiety or dysphoria, paranoid ideation, impaired judgment, sweating, palpitations, blurred vision, tremors, and lack of coordination. Patients may experience elevated blood pressure, tachycardia, and pupillary dilatation.

Treatment of hallucinogen intoxication is symptomatic.[18] The effects generally wear off within a day or so. Management relies on placing the patient in a quiet room with minimal stimulation. The patient should be reassured. Sometimes, benzodiazepines like clonazepam or lorazepam can be used. If the patient is amenable to oral medications, then these can be used, or else injectable medications can be resorted to. Rarely, injectable antipsychotics and physical restraints would need to be used for such patients. After resolution of the intoxication, the patient should be counseled and advised to seek treatment if hallucinogen-related disorders are identified.

Volatile solvents

There are a variety of volatile solvents that are used by individuals. These include glue, gasoline, spray paints, paint thinners, ink-eraser fluids, nitric oxide, and poppers (alkyl nitrites). Psychiatric effects of poppers are typically temporary and last for minutes. In India, glue, petrol, and ink-eraser fluids are used commonly. Volatile solvents are generally used by children and adolescents, though many adults also consume these substances. The features of volatile solvent intoxication include euphoria, aggression, dizziness, impaired judgment, lethargy and apathy, somnolence, stupor or coma, tremor, slurred speech, incoordination, unsteady gait, psychomotor retardation, and visual disturbance. Patients may experience muscle weakness and diplopia. Volatile solvents may also result in agitation and psychosis (pseudo-hallucinations, hallucinations, and ideas of grandiosity).

Some patients may have arrhythmias after intoxication with inhalants, and hence an ECG may be useful for such patients. Management of patients with inhalant intoxication is largely symptomatic.[18] Monitoring of oxygenation and ventilation is needed, along with maintaining the airway. Supplementary oxygen and intravenous fluids can be used

for some of the patients as needed. Benzodiazepines like lorazepam 1–2 mg can be used for agitation or psychosis. The intoxication generally abates after a short period of time, and the patient improves. Regular users of inhalants should be further referred for treatment.

Polysubstance use

Sometimes healthcare providers working in emergency settings may encounter patients with a history of polysubstance use, which means consumption of more than one drug at once. The substances involved could be illicit, prescription drugs or a combination of both. Alcohol, benzodiazepines, and cannabis are common substances used in combination with other psychoactive substances. Multiple substances are generally mixed together with the aim of enhancing the psychoactive effect, off-setting the adverse effects, and alleviating the withdrawal symptoms.

Risk of intoxication and overdose is heightened when multiple substances are consumed together. This could be either due to mutual potentiation of individual drugs' effects or due to inadvertent consumption of greater amounts of substances in an intoxicated state. Thus, intoxication with multiple substances may sometimes present with a complicated clinical picture and may pose diagnostic challenges.[16]

Common symptoms of polysubstance intoxication can include the following:

1. drowsiness, sleepiness, and inability to wake up
2. chest pain and heart palpitations (especially when multiple stimulants have been mixed)
3. stomach pain, nausea, vomiting, and diarrhea
4. feeling overly hot or cold and having skin that is sweaty or very dry
5. slurred speech and inability to complete normal tasks

Management of intoxication with multiple substances in an emergency setting

There are no fixed guidelines for the treatment of intoxication with multiple substances, and the healthcare professional is required to employ careful observation, thorough assessment, and early intervention in order to prevent complications.[19]

Details of consumed substances, if available, should be elicited from the patient, if responsive, and attendants. It is advisable to refer to medical records, if available, for relevant information on history of substance use and prescription details. Any past episodes of overdose or seizures should be noted. Physical examination may offer clues to substance use; for example, pupil size to detect pin point pupils, characteristic odors emanating from nose or mouth, needle track marks, or any other tell-tale signs that may help identify the substances consumed. Additionally, a complete systemic examination with special attention to CNS and cardiopulmonary systems is often necessary. A drug panel test may be useful to ascertain the substances being used.[20]

Management of polysubstance use in the emergency department aims at preventing and managing life-threatening complications of consumption of multiple psychoactive substances. While definitive management varies from case to case (based on the combination of substances), some standard practices are enumerated as follows:

1. Monitor vital signs and cardiac parameters with serial ECG monitoring.
2. Prevent aspiration by placing the patient in left lateral position.
3. Provide ventilator support when required.
4. Correct hyper- or hypothermia.
5. Intravenous fluids may be required.
6. Definitive management depends on confirmed report of the nature of substances consumed.
7. Sedatives may be used judiciously to avoid worsening respiratory depression.
8. Antidotes like naloxone and flumazenil may be used with caution to avoid unmasking effects of substances with opposing psychoactive effects.
9. Observation for at least 24–48 hours may be advised for any residual effects and detailed assessments.

It is desirable to involve specialized services, such as addiction psychiatry or psychiatry for detailed assessment once the patient is conscious and responsive. This may provide a good opportunity for intervention and long-term engagement with treatment services.

Substance intoxication in special populations

Substance use has now emerged as a universal phenomenon with no population group immune to its effects. Certain population groups require unique considerations while managing substance intoxication in emergency settings and in specialized treatment services due to their unique physiological and psychosocial needs. In this section, we will discuss three special groups of such populations: children and adolescents (aged less than 18 years), pregnant women, and elderly (aged 65+ years).

Children and adolescents

Children and adolescents form a special group in the context of substance use due to the fact that physiologically they have smaller body volumes, making a small amount of substance exert significant psychoactive effects, and a developing brain, which may be at risk of serious long-lasting adverse effects when exposed to psychoactive substances.

Experimental substance use is common in this adolescent group; substances commonly consumed out of curiosity are tobacco, alcohol, cannabis, volatile solvents, and opioids.[21] Children and young adolescents may present

with intoxication symptoms similar to those seen in adults with much smaller amounts of substances consumed, posing a higher risk of mortality. The essential principles of treatment are similar to those with adults.[22] Table 6 presents some of the elements to be taken into consideration in the management of children and adolescents with substance intoxication. One can also refer to the IPS CPG related to substance use among children and adolescents.[23]

Pregnant women

Illicit substances, tobacco, alcohol, and prescription drugs are especially harmful during pregnancy due to potential harm to both the mother and the fetus. Physiological changes in pregnancy often lead to unpredictable variations in the pharmacokinetics of drugs, making most medications and psychoactive substances risky. Despite this knowledge, global prevalence of substance use among pregnant women is about 6%, maximal among young pregnant women (18.3% among pregnant women aged 15–17 years). Pregnant women with intoxication present a challenging situation for the emergency department, as both the mother and the fetus are in need of medical attention, and medications need to be used with great caution. General considerations for management of an intoxicated pregnant woman in the emergency setting are presented in Table 7.

Elderly population

The elderly population has some unique risk factors for substance intoxication. They have a lower volume of distribution, leading to increased systemic concentration of consumed psychoactive substances. Often, compromised renal function causes reduced elimination of drugs from the systemic circulation. These factors lead to development of intoxication at relatively lower doses of the substances. Some prescription medications sometimes have a high risk of dependence (opioids and benzodiazepines). One may need to differentiate from symptoms of frailty syndrome, which manifests as memory problems, incontinence, falls, and limitations of functioning. Sometimes, interactions of the medications may also result in features of substance intoxication.[24] A few points to consider while managing elderly patients with substance intoxication in emergency settings are presented in Table 8.

Dual diagnosis

Dual diagnosis refers to the co-occurrence of a substance use disorder along with a psychiatric condition. Studies report that comorbid substance use disorders are substantially related to increased visits to the emergency department across multiple samples of patients with psychiatric disorders (e.g., schizophrenia, depression, anxiety, etc.). Schizophrenia, anxiety, depression, and dementia are common disorders associated with substance use. Presentation to the emergency unit may be required due to accidental overdose or overdose with a desire for self-harm. Pharmacokinetic interaction between substances

Table 6: General considerations in the management of children and adolescents with substance intoxication

Nature of the substance ingested and its dosage per kilo body weight should be identified as accurately as possible.
In cases where substance use is suspected but cannot be confirmed by clinical history, a detailed physical examination including a neurological assessment can be helpful in substance identification.
Administration of emetics, gastric lavage, and activated charcoal should be generally avoided.
Forced diuresis may lead to fluid overload and should be avoided.
There is limited evidence for safety and effectiveness of antidotes to specific substances, and the decision to use them depends on risk-benefit analysis.
A period of at least 24 hours for observation after stabilization of the patient is advised.

Table 7: General considerations for management of an intoxicated pregnant woman in emergency

Monitoring of vital signs is essential for both the mother (heart rate, pulse, blood pressure, SpO_2, temperature) and the fetus (fetal heart rate, non-stress test). In case of signs of fetal distress, close involvement of obstetrician and/or neonatologist may become important.
Reduced fetal movements may indicate fetal sedation and/or hypoxia while increased fetal movements may indicate the fetus experiencing withdrawal symptoms.
Pharmacotherapeutic agents should be avoided as far as possible, and if prescribed, agents with reliable evidence for safety should be given in the lowest possible effective dose.
As intoxication effects wear off, uterine contractions may increase, sometimes precipitating premature rupture of membranes, preterm labor, miscarriage or placental abruption.
In cases of overdose with opioids and benzodiazepines, antidotes may be given after careful risk-benefit assessment. Precipitating withdrawals should be avoided as far as possible.
After stabilization, it is advised that the woman be referred to specialized treatment services for management of harmful patterns of substance use.

Table 8: Considerations for the management of elderly patients with substance intoxication in the emergency setting

Aggressive initial treatment is necessary because the elderly patients are generally more susceptible to life-threatening complications of drug overdose and have lower body reserves to handle health issues.
A pre-existing physical illness can often confuse the clinical picture. Initial examination should focus on the symptoms and physical findings likely to be attributed to the drug involved while attempts should be made to differentiate the symptom etiology based on temporality and presentation.
Essential elements of history include the name and amount of the drug involved, route of exposure, time since exposure, whether the exposure was acute or chronic, symptoms or physical findings, underlying medical or psychiatric illnesses, concurrent medications, and any previously administered medical treatment.
A laboratory analysis of blood or urine may be helpful in confirming a drug-related problem.
Most patients need symptomatic care for intoxication. When specific antidotes are indicated, these should be given in the same doses as those administered to younger patients.
Forced diuresis is risky in patients with congestive heart failure and may lead to fluid overload and pulmonary edema.
Hemodialysis or hemoperfusion may be required at lower plasma drug concentrations of drugs like barbiturates in older patients (though clinical use of barbiturates is very infrequent now).

and psycho-pharmaceutical agents may lead to alterations in metabolism of both and present with symptoms of overdose/intoxication.

Dual diagnosis often complicates the clinical picture in an emergency setting. Detailed history along with access to the patient's medical records with details of the prescription may help to clarify the scenario. Quantitative analyses of intoxicating drugs and medications are helpful in deciding the course of treatment. Specialized psychiatric services along with critical care services, if required, must be referred to in such a scenario at the earliest.

NEW PSYCHOACTIVE SUBSTANCES

The term "new psychoactive substances" (NPS) is used for a broad range of chemical compounds that are consumed for their psychoactive properties but that are not controlled under the United Nations drug control conventions. New psychoactive substances may pose similar risks to those associated with better-known controlled substances and often appear in the same broad classes of drugs (opioids, benzodiazepines, stimulants, etc.). Yet they are chemically different, so the risks they present to health may differ or simply be unknown.

Emergencies associated with NPS may result from trying an unknown agent or a substance with unknown potency or unknown drug interactions. In an emergency associated with NPS use, history becomes of utmost importance. Urine drug screening may not detect these agents and blood assays may not have been developed for them either. While the emergency management procedure remains essentially the same, care must be taken to gather as much information about the NPS as possible for an effective detoxification. Specialized psychiatric services along with critical care services, if required, must be involved.

CONCLUSION

Substance intoxication is often a reason for seeking emergency care. Some substance intoxications (like opioid, alcohol, or benzodiazepine intoxications) can be life-threatening. A certain degree of clinical suspicion is required to identify substance intoxication, especially when the patient is not spontaneously forthcoming with information. Substance intoxication needs to be managed based on the type(s) of substance(s) consumed, current medical and psychiatric status of the patient, history available and examination findings, and available resources. Intoxication may occur in both naïve and regular substance users. The principles of management include ensuring the safety of the patient, managing their vitals (especially if they are in a life-threatening state), letting the symptoms and signs of intoxication abate, handling the concurrent medical or psychiatric condition, and link up to further services as required. For unmotivated individuals, brief interventions may be helpful in the emergency setting as well.[25] Psychiatrists have an important role to play in the management of patients with substance intoxication, and close collaboration with emergency physicians in the care of patients may lead to better patient outcomes.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

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Access this article online	
Website: www.indianjpsychiatry.org	Quick Response Code
DOI: 10.4103/indianjpsychiatry.indianjpsychiatry_490_22	

How to cite this article: Sarkar S, Bhatia G, Dhawan A. Clinical Practice Guidelines for assessment and management of patients with substance intoxication presenting to the emergency department. Indian J Psychiatry 2023;65:196-211.