433 Teams

PSYCHIATRY

Lecture (7)

Substance abuse disorders

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Terminology:

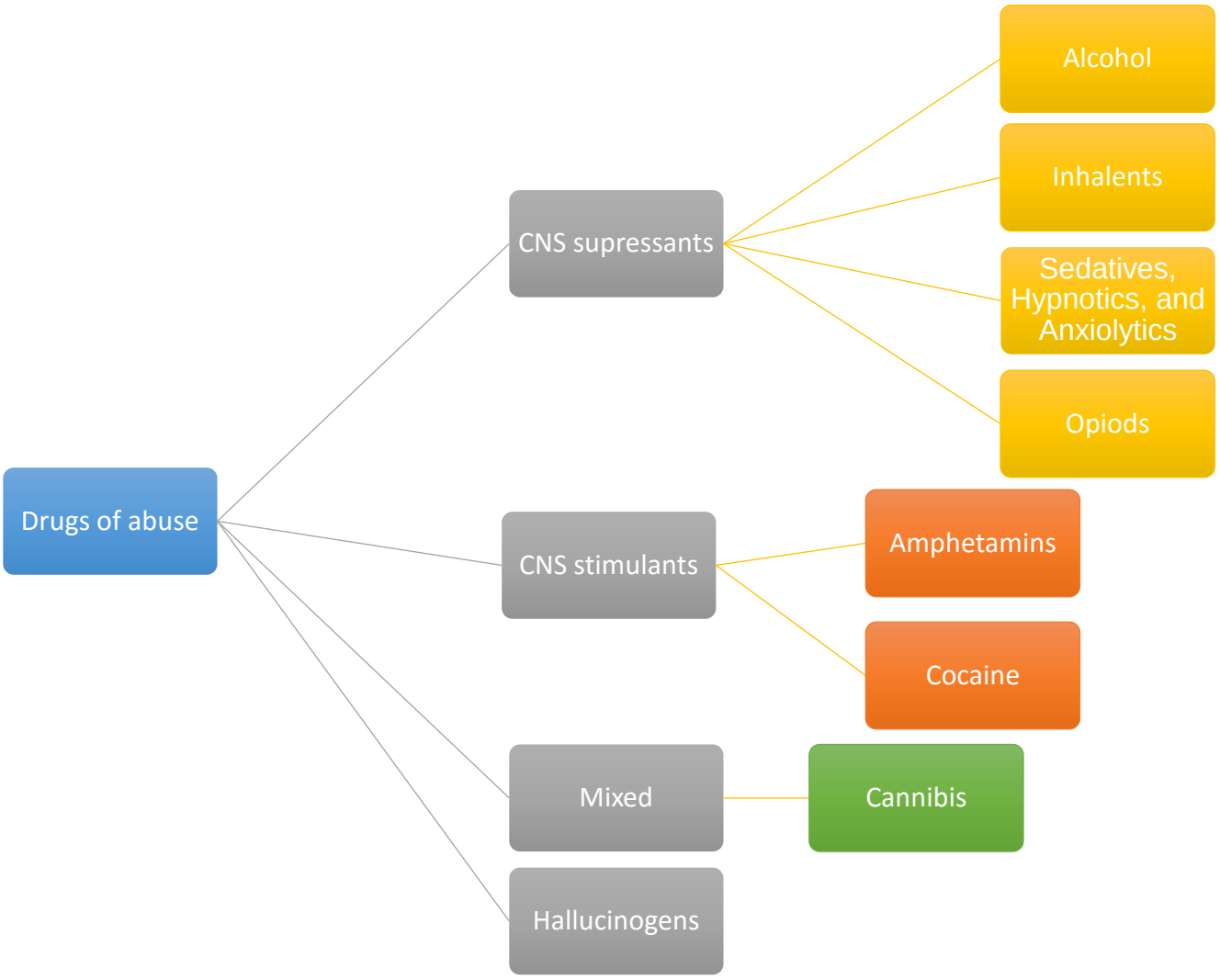
Abuse: self-administration of any substance in a culturally disapproved manner that causes adverse consequences.

Intoxication: the transient effect (physical and psychological) due to recent substance ingestion, which disappears when the substance is eliminated.

Withdrawal: a group of symptoms and signs occurring when the drug is withdrawn or reduced in amount.

Dependence: the physiological state of neuroadaptation produced by repeated administration of a drug, necessitating continued administration to prevent appearance of withdrawal state.

Addiction: a nonscientific term that implies dependence and associated deterioration of physical mental health as well as high tendency to relapse after discontinuation.



Assessment in substance abuse:

- Collateral history.
- Urine screening tests.
- blood screening tests (alcohol, barbiturates).
- Pattern of Abuse:
  - ✓ What? (type, dose, route, effect: nature and duration).
  - ✓ How? (frequency, duration, how long, source, and situation)
  - ✓ Why? (? psychosocial problems).
  - ✓ Dependence?
- Complications:
  - ✓ Psychosocial
  - ✓ Physical

Alcohol:

- Alcohol causes nearly 4% of deaths worldwide, more than AIDS, tuberculosis or violence.
- Alcohol is the world's leading risk factor for death among males aged 15-59
- Alcohol is a causal factor in 60 types of diseases and injuries.

Risk factors of Alcohol abuse:

1. **Vulnerable personality:**
   - ✓ impulsive, gregarious, less conforming, isolated or avoidant persons.
2. **Vulnerable occupation:**
   - ✓ senior businessmen, journalists, doctors.
3. **Psychosocial stresses:**
   - ✓ social isolation, financial, occupational or academic difficulties, and marital conflicts.
4. **Emotional problems**:
   - ✓ anxiety, chronic insomnia depression.

Alcohol abuse

Excessive consumption	Problem drinking	Alcohol dependence	Alcohol-related disability:
• harmful use	• drinking that has caused disability, but not dependence	• This usually denotes alcoholism	• physical, mental and social.

Clinical presentation:

- **Alcohol intoxication:** early intoxication includes sense of well-being, emotional lability, irritability and incoordination → to ataxia and slurred speech.
- **Heavy intoxication** (blood level > 300 mg/ml) → **alcoholic coma & death**
- Acute intoxication may mimic:
  - ✓ panic attacks
  - ✓ Depression

Laboratory tests to identify heavy drinking (>5 drinks/day):

1. Blood Alcohol Levels (BAL).
2. Gamma-glutamyltransferase (GGTP > 35 IU/L)
3. Erythrocyte mean corpuscular volume (MCV >91.5 μ^3)
4. High AST/ALT

Ethanol plasma concentrations Vs. CNS effects

- ✓ acute psychosis with delusions +/- hallucinations

Ethanol plasma concentration (mg/dL)	Impairment
	Feeling of relaxation, euphoria
20-30	Slowed thinking
30-80	Motor incoordination
80-200	Cognition, judgement, labilty

200-300	Slurring, ataxia, nystagmus, blackouts
>300	Vital signs, coma, possible death due to the respiratory failure

Stages of alcohol dependence:

1st (early stage): The drinker has not lost control of his health. Relatives and friends do not find anything unusual. He drinks for stress relief or mood elevation.

2nd (excessive consumption): He drinks so much and for no reasons, loses control of physical and mental capacity, and sometime may become a nuisance. Relatives and friends become aware that he has a problem with alcohol and he still believes that he can quit alcohol at any time.

3rd (complications): The chronic stage of alcoholism; physic and mental complications. Trails to stop drinking with repeated failure.

Complications of chronic alcohol abuse

Medical	Psychiatric	Social
Neurological Cerebral degeneration Seizures Peripheral neuropathy Optic nerve atrophy Alimentary Tumors (esophagus, liver) Gastritis, peptic ulcer Pancreatitis Hepatitis, liver cirrhosis Cardiomyopathy Anemia Gynaecomastia	Amnestic disorder Delirium Dementia Psychosis Depression Reduced sexual desire Insomnia Personality deterioration Increased risk of suicide Morbid jealousy	Social isolation Job loss Marital conflicts Family problems Legal troubles Social stigma

Screening for alcohol dependence:

CAGE questionnaire. Ask the patient: "Have you ever":

1.wanted to **Cut down** on your drinking?

2. felt **Annoyed** by criticism of your drinking?

3. felt **Guilty** about drinking?

4. taken a drink as an "**Eye opener**" (to prevent the shakes)?"

≥ 2 "yes" answers are considered a positive screen.

One "yes" answer should arouse suspicion of abuse.

Alcohol withdrawal:

Stage	Symptoms
I (6-8 hours)	**Autonomic hyperactivity** tremor, agitation, diaphoresis, anxiety, tachycardia nausea, vomiting, anorexia, headache, insomnia, and craving for alcohol
II (10-30 hours)	**Hallucinations** (auditory or visual, tactile, olfactory or mixed), illusions, disordered perception **+ above**
III (12-48 hours)	**Grand mal seizures** 3-4% of untreated patients progress to stage 3; more than 50% have multiple seizures; >30% have Delirium Tremens if untreated.
IV (> 2-3 days)	**Delirium tremens (DTs)**

Delirium tremens (DTs):

it is a **severe form of alcohol withdrawal** starting 2 – 3 days after last alcohol intake; it may be precipitated by infections, and characterized by: **delirium, gross tremor (tremens),** and **other features:** electrolyte disturbances & dehydration, autonomic disturbances (fever, dilated pupils & unstable BP, pulse and respiratory rates), and insomnia.

Course: peaks on 3rd or 4th day, **lasts for 3 – 5 days**, worsens at night, and **followed by a period of prolonged deep sleep**, from which the person awakes with no symptoms and **has amnesia for the period of delirium**.

Complications: **Violence** (may lead to homicide or suicide), **Seizures** (may lead to aspiration, chest infection, & coma), and **Death** (it can be due to: suicide / cardiac arrhythmias/ electrolyte imbalance/aspiration/ chest infection/ volume depletion. **Mortality rate: 5 -15%.**

Treatment:

1. It should be in an **ICU or a medical word** because it is a serious medical emergency.

2.Avoid antipsychotics (because they lower seizure threshold).

3. **Guard against seizures;** benzodiazepines (e.g. diazepam) +/- magnesium sulfate & an anticonvulsant Rx.

4. **Rehydration** is a vital step.

5. **Thiamine (B1) supplement** is essential for glucose

metabolism (B1 is usually low in DTs patients).

Treatment:

- **Treating Alcohol Intoxicated Patient:**
  - ✓ Conscious: supportive, antipsychotic if agitated.
  - ✓ Unconscious: ABC

Detoxification (planned alcohol withdrawal)

- **Treating Alcohol Withdrawal:**

1. Supportive,
2. thiamine
3. long acting benzodiazepines.
4. ± anticonvulsants for seizure.

- **Maintaining Abstinence:**
  - ✓ **Disulfiram** – blockade of aldehyde dehydrogenase → accumulation of acetaldehyde - nausea, flushing, tachycardia, hyperventilation, panic…
  - ✓ **Naloxone** – reduces alcohol-induced reward.
  - ✓ **Acamprosate** – anti-craving effects.
- **Psychological:** Individual, group Rx, relapse prevention.

Sedatives, Hypnotics, and Anxiolytics:

This class of substances includes all controlled antianxiety and sleeping medications:

- **Benzodiazepines** (e.g. **diazepam, lorazepam**)
- Benzodiazepine - like drugs (e.g. zolpidem, zopiclone)
- Barbiturates (e.g. secobarbital)
- Barbiturates - like hypnotics (e.g. methaqualone)
- Carbamates (e.g. meprobamate)

Clonazepam (Rivotril) [street name: Roche 2], alprazolam (Xanax) and flunitrazepam (Rohypnol), have become drugs of abuse.

- **Intoxication and withdrawal features are similar to alcohol** [see alcohol section]
- These substances are **often taken with other brain depressants**, like alcohol, which can produce additive serious effects **(e.g. respiratory depression).**

Abuse of inhalants (volatile solvents) التشفيط:

Inhalants are volatile organic substances (most are aromatic hydrocarbons) that can be inhaled for psychotropic effects. The active compounds in these inhalants are usually **acetone**, **benzene** or **toluene**.

- Brain depressants.
- Abuse commonly seen in **adolescents** in low socioeconomic status.
- Recent abuse can be identified by unusual breath or odor, rashes around the nose and mouth .

Intoxication:

✓ **Low doses:** euphoria, excitement, pleasant floating sensations, and disinhibition.
✓ **High doses:** disturbed consciousness, perceptual disturbances, impulsiveness, assultiveness, impaired judgment, sedation, slurred speech, nystagmus, ataxia, incoordination, nystagmus, ataxia, incoordination, nausea, and vomiting.

Complications :

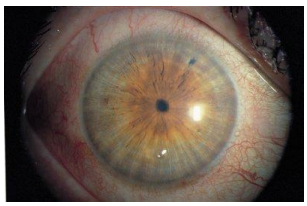
✓ **Physical**: irreversible multi-organ damages (brain, lungs, liver, kidneys, muscles, peripheral nerves and bone marrow).
✓ **Psychological**: depressions, conduct or personality disorders...etc.
✓ **Social**: broken or abusive family life.
✓ **Death** may occur during intoxication because of: respiratory depression, asphyxiation, aspiration of vomitus, cardiac arrhythmia or serious injury.

Treatment: **symptomatic treatment** (for complications), and **psychiatric rehabilitation**. No specific medical treatment.

Opioids:

Opioids include several narcotic substances: **(opium, heroin, morphine, codeine, pethidine, methadone).**

Opioid intoxication:

Presentation	Treatment
▪ Euphoria ▪ Relaxation ▪ Analgesia ▪ Disturbed consciousness ▪ Small pupil (initially) ▪ Bradycardia ▪ Reduced appetite ▪ Constipation ▪ Respiratory depression	in ICU: 1. Monitoring 2. Naloxone 3. Open airway – oxygen – IV fluids 

Opioid withdrawal: (not life threatening)

Presentation	Treatment
1. Rhinorrhea (runny nose). **2. Lacrimation.** **3. Pupillary dilation.** **4. Yawning.** **5. Insomnia.** **6. Fever / sweating/piloerection.** **7. Muscle/joint aches.** **8. Nausea or vomiting.** **9. Diarrhea.** **10. Dysphoric mood.** **11. Craving (desperate searching for opioids).**	**Short-term:** 1. painkillers, 2. sedatives, 3. observation. 4. Clonidine can be used to control the release phenomena (sympathetic over activity, nausea, vomiting and diarrhea) **Long term:** Harm reduction strategies 1. Methadone 2. Buprenorphine/Naloxone

Complications of IV Usage:

1. AIDS,
2. Hepatitis
3. Endocarditis
4. septicemia

CNS stimulants: amphetamines, cocaine, MDMA (Methylenedioxymethamphetamine), caffeine, nicotine.

Psychological	*Physical*
✓ Enhanced cognitive function ✓ Elevated mood ✓ Over activity ✓ Increased confidence, self-esteem and sociability ✓ Overtalkativeness ✓ Insomnia **In high doses/prolonged use:** ▪ Restlessness, irritability ▪ Paranoid psychosis, hallucinations (visual) ▪ Aggressiveness, hostility	✓ Reduced sense of fatigue ✓ Reduced appetite (anorexia) ✓ Dilated pupils ✓ Tremors **In high doses/prolonged use:** ▪ Nausea, vomiting, hyperthermia, cardiac arrhythmias, severe hypertension, CVA, seizures ▪ Dizziness, respiratory distress,

Amphetamines:

1. **Captagon** (fenethylline)
2. Speed (Benzedrine, Dexedrine)
3. MDMA (ecstasy)
4. Methamphetamine (crystal, ice)

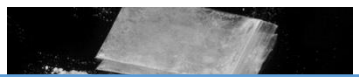
Cocaine:

- Forms: free base, crack
- Routes:
  - ✓ Intranasal
  - ✓ IV/ Subcutaneous

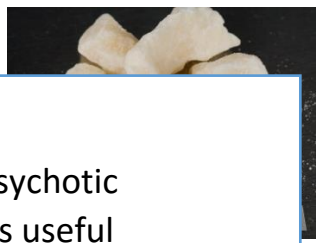
Captagon

Crystal

Cocaine



Crack



Treatment:

- ✓ Symptomatic use of antipsychotic
- ✓ Antidepressant sometimes useful
- ✓ Psychotherapy (individual, family & group)

- the difference being that it **stops within few days** and the **drug can be detected in urine.**

Cannabis: marijuana, hash, hashish

- ✓ Usually smoked but can be ingested (slower effect)
- ✓ The active compound in all cannabis product is THC.
- ✓ THC → activate reword system (dopamine release)

Main features	*Physical effects*
-Euphoria. -Heightened perception. -Talkativeness -Slowed time perception. -Disinhibition.	-**Red conjunctiva** -Dry mouth -Mild tachycardia -**Increased appetite** -Impaired coordination -Impaired cognitive function -Anxiety +/- panic attacks with derealization and depersonalization -Brief psychosis**(paranoid ideations)**

Treatment: in the outpatient setting

- **Antipsychotics** (e.g. risperidone3 mg/day) for 6 months
- Psychotherapeutic methods (individual, family, and group psychotherapy) are usually necessary to achieve lasting abstinence.

✓ Cannabis may trigger anxiety / panic attacks & can induce delirium. Following discontinuation of cannabis, some patients may develop depressive features. Chronic use of cannabis can lead to a state of apathy and amotivation (amotivation syndrome) but this may be more a reflection of patient's personality structure than an effect of cannabis.

Hallucinogens:

- These are group of substances that induce hallucination and produce **loss of contact with reality.**
- Natural e.g. psilocybin (**magic mushroom**) or synthetic like lysergic acid diethylamide (**LSD**)
- Psychological effects: **perceptual distortion** (changing shapes and colors), Hallucination, Paranoid ideations.
- Physical: Tachycardia, hypertension, cerebellar signs, wide pupils.
- No tolerance or dependence/ no withdrawal.
- The only danger is in what people do under the influence: Accidents, suicide, homicide, violence.

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