

# Deliriant Poisons:

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KANODIA

## Datura Fastuosa:

→ Datura  
→ Cannabis  
→ Cocaine

Datura alba (white-flowered plant)

Datura niger (deep purple-flowered plant)

→ fruits are spherical & have sharp spines (thorn-apple) & contains upto 500 yellowish-brown seeds.

→ flowers are bell-shaped

→ contains 0.2 - 1.4% hyoscyne/scopolamine, hyoscamine, traces of atropine.

Alkaloids: a complex substance having a nitrogenous base (found in various plants).

→ chemically, it behaves like an alkali (reacts with acids to form salt & water)

→ quality depends on the pyridine nucleus.

→ Examples: • Atropine

• Hyoscyne

• Morphine

• Quinine

• Strychnine

• Aconitine

• Ergotexine

• Cocaine

• Codeine

Action: initial stimulation of higher brain centres → stimulation of motor centres → depression → paralysis.

→ peripheral anticholinergic (parasympatholytic) action.

## Signs & Symptoms:

→ contact dermatitis in sensitive persons.

• bitter taste

• dryness of mouth & throat

• difficulty in talking

• hoarseness of voice

• congested conjunctivae

• widely dilated pupils, loss of accommodation

• light reflexes are initially - sluggish, later - absent

• dysphagia

• burning pain in stomach

• vomiting

• face becomes flushed

• unilateral mydriasis (Cornpicker's pupil)

- Mental changes: — restlessness — agitation
- Urinary retention
- skin: dry & hot
- ↑ muscle tone & deep reflexes (muscular spasm & convulsions)
- scarlatinal rash/exfoliation of skin
- Hallucinations, delusions → Deep sleep, coma
- rapid pulse (120-140 bpm)
- ↑ respiration
- ↑ temperature (by 2-3°)
- Delirium

- 8 D's:
- Dryness of mouth
  - Dry, hot skin
  - Drowsiness
  - Dysphagia
  - Drunken gait
  - Death due to respiratory failure
  - Dilated pupils
  - Delirium

Fatal dose: 0.6-1 g (100-125 seeds)

Fatal Period: 24 hours

### Treatment:

- 1] Emetics
- 2] Stomach wash with a weak solution of tannic acid.
- 3] Activated charcoal & cathartic.
- 4] Wash-out lower bowel frequently.
- 5] Physostigmine 1 mg i.v./i.m. at hourly intervals.
- 6] Pilocarpine nitrate 5mg s.c. (can be repeated after 2 hours)
- 7] Avoid morphine (due to risk of depression of respiratory centre)
- 8] Delirium ⇒ bromides, short-acting barbiturates
- 9] Light diet, free purgation
- 10] Symptomatic management.

PM Appearances: those of asphyxia

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→ seeds resist putrefaction for a long time.

## Circumstances of Poisoning:

- 1] Crushed/powdered seeds are used by criminals for stupefying a victim prior to robbery/rape/kidnapping  $\Rightarrow$  Road poison.
- 2] Not used for suicide.
- 3] Homicide is very rare.
- 4] Sometimes used as an abortifacient.
- 5] Has aphrodisiac properties

A person suffering from delirium of *Datura* is not criminally responsible for his acts.

Hydriatic test: Drop of solution to be tested is put into the eyes of a cat  $\longrightarrow$  pupils dilate within 30 mins if *Datura* is present (due to atropine).

{ *Atropa belladonna* = deadly nightshade  
     $\rightarrow$  active principle: 1-hyoscamine, atropine, scopolamine  
     $\rightarrow$  muscarinic antagonists. }

## Cannabis Sativa/Indica: a.k.a Indian hemp

- active principle is present in its resin  $\Rightarrow$  cannabinol (inert)  $\xrightarrow{\text{exposure to heat}}$  converted to very active isomeric tetrahydrocannabinols (THC)
- CNS stimulant
- a.k.a. Dope/weed/hash/hashish/bhang.
- most widely used illicit drug in the world.

## Signs & Symptoms:

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- Small doses:
  - Euphoria
  - Heightening of subjective experiences
  - Positivity
  - Disorientation
- Moderate doses: above effects intensified with
  - impaired immediate memory function
  - lapse of attention
- High doses:
  - changes in body image
  - marked sensory distortion
  - depersonalisation

## Symptoms of Intoxication:

a) Psychiatric:

- feeling of detachment, depersonalisation
- euphoria, elation

- irrelevant thoughts, decreased concentration
- increased awareness of stimuli
- feeling of precordial distress & tightness in chest.
- maladaptive behavioural effects (impaired judgement)
- Speech changes: rapid, impaired

b) Physical:

- ↑ appetite & thirst
- nausea, dizziness
- dysesthesias
- somnolence
- paraesthesiae
- restlessness
- ataxia
- tremors
- dry mouth
- tachycardia

Fatal Dose:

- Charas - 2g
- Ganja - 8g
- [THC - 30 mg/kg]

Fatal Period: Several days.

## Treatment:

- 1] Stomach wash or emesis, activated charcoal, cathartic.
- 2] 100 mL of 50% glucose + 2mg naloxone + 100 mg thiamine i.v.
- 3] 5-10 mg diazepam (in case of violence/aggression)
- 4] Assurance.
- 5] In case of flashbacks: anti-anxiety &/or anti-psychotic drugs.
- 6] Psychotherapy.

## PM Appearances: those of asphyxia

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Chronic Poisoning: tolerance & psychological dependence develop with repeated use.

- Excess use ⇒ degeneration of CNS & insanity.
- ↓ serum testosterone, ↓ sperm count, gynecomastia, impotence.
- loss of appetite, weakness, wasting
- tremors, sleepy facial expression, red eyes
- Rarely ⇒ auditory & visual hallucination, delusion of persecution (Hashish insanity)
- Person may run amok ⇒ psychic disturbance marked by a period of depression, followed by violent attempts to kill (impulse to murder).
- Chronic use may lead to amotivational syndrome ⇒ loss of age appropriate behaviour
- no physiological dependence or addiction.

## Circumstances of Poisoning:

- 1) Overindulgence
- 2) Accidental ingestion / inhalation
- 3) Road poisoning (to stupefy persons to facilitate robbery).
- 4) used as an aphrodisiac (supposed to increase duration of coitus).

Cocaine: obtained from leaves of *Erythroxylum coca*.

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→ colourless, odourless, crystalline substance with bitter taste.

→ alkaloids present: — ecgonine — hygrine — cinnamyl cocaine.

→ used as a local anaesthetic

→ a.k.a Coke/Snow/White Lady/Cadillac.

→ Crack = Cocaine + Baking soda + water

Action: desensitises terminal nerves & causes vasoconstriction at the site of application.

→ powerful CNS stimulant (short duration) → depression.

→ sympathomimetic properties

Cocaine

Amphetamine

Nicotine

Barbiturates

can be found in the stomach, even when given parenterally.

## Signs & Symptoms:

1] Stage of Excitement: • bitter taste & dryness in the mouth

• feeling of well-being

• loss of depression & fatigue

• ↑ pulse, respirations

• dilated pupils

• sweating

• ↑ temperature

• exaggerated reflexes

• tremors, convulsions

• tingling/numbness in hands & feet

• dysphagia

• pallor of skin

• cyanosis

• hypertension

may lead to cerebral  
bleeding / rupture of  
aneurysm

2] Stage of Depression: • feeble respirations

• profuse perspiration

• collapse, convulsions, death (due to respiratory failure / cardiac arrest / vascular collapse).

→ Cocaine + Heroin (injection) = Speedball

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Fatal Dose: 1 gm orally

Fatal Period: few minutes to few hours

- Complications:
- Cerebrovascular accidents
  - Subarachnoid / Intracerebral haemorrhage
  - Aortic dissection
  - Myocardial Infarction
  - Skin necrosis
  - Pulmonary infarcts

Treatment:

- 1] If taken orally  $\Rightarrow$  gastric lavage with warm water containing  $\text{KMnO}_4$  / charcoal / tannic acid.
- 2] If applied to nose / throat  $\Rightarrow$  wash-out mucous membrane with water.
- 3] If injected  $\Rightarrow$  apply a ligature above the part.
- 4] For convulsions  $\Rightarrow$  Chloroform or short-acting barbiturates.
- 5] Amyl nitrate  $\Rightarrow$  antidote  $\Rightarrow$  given by inhalation
- 6] Airway & circulatory stabilisation.
- 7] Thiamine 100 mg i.v.
- 8] Naloxone hydrochloride 2 mg i.v.
- 9] General symptomatic treatment.

PM Appearances: intense asphyxial signs

→ Pulmonary congestion & oedema (lungs weigh 3-4 times the normal)

Cocaine Habit: [Cocainism / Cocainophagia / Cocainomania]

→ Chronic abusers can tolerate  $\sim 10$  gm/day.

- digestive disturbances, anorexia
- salivation
- tachycardia, tachypnoea
- insomnia
- sunken eyes, dilated pupil
- black tongue & teeth

→ Magnan's symptom / Cocaine bugs ⇒ feeling of grains of sand lying under the skin  
or small insects creeping on the skin giving rise to itching sensation → excoriation  
→ irregular scratches / ulcers.

### Circumstances of Poisoning:

- 1] rarely used for homicide / suicide.
- 2] Accidental ⇒ addiction
- 3] Aphrodisiac ⇒ ↑ duration of sexual act (by paralyzing sensory nerves of glans penis).