DATURA FASTUOSA

All of these plants have long histories of hallucinogenic use and have been connected with sorcery, witchcraft, native medicine, and magico-religious rites dating back to 1500 BC All parts of the plant are poisonous esp seeds and the fruit, even nectar

- contain the tropane alkaloids atropine, 0.2-1.4% hyoscine (scopolamine), and hyoscyamine
- Alkaloids -- plant metabolites -- have a nitrogen-containing chemical ring structure, alkali-like chemical reactivity, and pharmacologic activity.
- The alkaloids represent a very diverse group of medically significant compounds that include well-known drugs like the opiates.

ACTIONS

- Alkaloids atropine, hyoscine, hyocyamine first
- Stimulates the higher centres, then motor centres

- Depression and paralysis of the vital centres of medulla
- Peripheral effects are predominant and result from anticholinergic action

DELIRIUM

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- In early stage the person is restless, uneasy, sleepless. He then completely loses self control, becomes exited and talks furiously
- Delusions and hallucinations are some times present
- May become impulsive, violent and may commit suicide. Such person is not responsible for his criminal acts.

DELUSION

- Delusion is a false belief in something which is not a fact, and which persists even after its falsity has been clearly demonstrated.
- A normal person can have a delusion , but is capable of correcting it by his reasoning power, by his past experience, or by being convinced by others.
- Delusion in insane person is a symptom of brain disease. It is under the control of emotional but not rational forces.
- Delusions are found in epileptic, affective or schizophrenic psychosis.
- Not found in neurosis or neurotic illnesses.

HALLUCINATION

- Is a false sense perception without any external stimulus or object to produce it. They are purely imaginary, and may affect any or all the special senses.
- TYPES
- 1. VISUAL: A person imagines of being attacked by a lion when no lion exists.
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- 6. PSYCHOMOTOR: A man will feeling of movement of some part of the body in the absence of such movement.

ILLUSION

- Is a false interpretation by the sense of an external object or stimulus which has a real existence.
- A sane person may experience illusion, but is capable of correcting the false impressions.
- An insane person continues to believe in the illusions, even though the real facts are clearly pointed out.
- Present in psychosis, particularly the organic type.

SIGNS AND SYMPTOMS

- Dermatitis
- If seeds are eaten symptoms in half an hour
- If decoction of seeds given –in few minutes
- If alkaloid used almost immediately
- Bitter taste, dryness of mouth and throat, difficulty in talking, dysphagia, burning pain in the stomach and vomiting.
- Voice becomes hoarse

Face becomes flushed, conjuctiva congested

- Pupils widely dilated with loss of accommodation for near vision, temporary blindness, photophobia, diplopia
- Light reflx first sluggish later absent
- Pollen can cause unilateral mydriasis (cornpicker's pupil)
- Mental changes--Restlessness, agitation, pt cannot recognise relatives/ friends
- Confused, giddy, staggers as if drunk

Delirium- is restless and purposeless In early stages—excitement, talkative, incoherence Pt may be silent but usually he is noisy tries to run away from his bed picks at the bed clothes (carphologia) pulls imaginary threads from his finger tips threads imaginary needles Hallucinations of sight and hearing and delusions occurs As intoxication advances this excitement passes off in 1-2 hrs, and the patient passes into deep sleep or coma. Patient remains in this condition for 2-3 days but usually

distinct improvement occurs in 24 hrs

Urinary retention or inability to pass urine

- Skin dry and hot
- Pulse rapid 120-140/ min, full and bounding later weak, irregular
- Respiration increased
- Temp raised by 2-3 degrees
- Ms tone and deep reflexes increased, muscular spasm, convulsions
- A scarlatinal rash or exfoliation of the skin over most of the body surface

8 D's

Dryness of mouth Dysphagia **Dilated** pupils Dry hot skin Drunken gait Delirium Drowsiness Death due to respiratory failure

The mnemonic "red as a beet, dry as a bone, blind as a bat, mad as a hatter, and hot as a hare" is useful to remember the anticholinergic toxidrome. FATAL DOSE: 0.6 to 1.0 g (100 to 125 seeds)

• FATAL PERIOD: 24 hrs

• Treatment:

 As in all cases of suspected poisoning, follow the ABCDEs of emergency medicine (airway, breathing, circulation, disability, exposure).
 then the ABCDEs of toxicology (antidotes, basics, change absorption, change distribution, change elimination). 2) Emetics can be used

- 3) GL with weak sol. of tannic acid
- 4) Catharsis
- 5) Physostigmine one mg i.v or i.m at hrly intervals
- 6) Pilocarpine nitrate 5 mg s.c is useful, but no action on brain
- 7) No morphine
- 8) Barbiturates/ bromides for delirium
- 9) Symptomatic

	TRAIT	DATURA SEEDS	CAPSICUM SEEDS
1	SIZE	LARGE& THICK	SMALL & THIN
2	SHAPE	KIDNEY SHAPED	ROUNDED
3	COLOUR	DARK OR YELLOWISH BROWN	PALE YELLOW
4	MARGINS	LATERALLY COMPRESSED DOUBLE EDGED AT CONVEX BORDER	CONVEX BORDER SIMPLE & SHARP
5	SURFACE	NUMEROUS SMALL DEPRESSIONS	SMOOTH
6	SMELL	ODOURLESS	PUNGENT
7	TASTE	BITTER	PUNGENT
8	EMBRYO	ON L/S CURVED OUTWARDS AT HILUM	INWARDS LIKE FIG 6

PM Appearences Not characterstic but those of asphyxia Seeds or their fragments

MLI

Road poison Homicide rare, suicide rare

Abortifacient

Accidental poisoning

Aphrodisiac properties

The seeds and leaves are mixed with tobacco or ganja and smoked in a pipe

Decoction of seeds added to liquor

A person suffering from delirium of datura is not criminally responsible for his acts

 Mydriatic test: A drop of test sol is put into eye of rabbit or cat. The pupils dilate within half an hour

ATROPA BELLADONA

- Deadly nightshade
- All parts toxic
- Active principle is 1- hyocyamine
- Root contains 87-97% of hyocyamine, 3-15% of atropine, and upto 2.5% scopolamine
- Acts by inhibiting muscarinic effects of acetylcholine
- Absorbed from skin and parenteral sites
- Rapidly detoxicated in liver
- S/S, t/t, PM appearences similar to datura
- 120 mg of atropine or hyocyamine and 30 mg of hyocine are fatal within 24 hrs

CANNABIS SATIVA OR INDICA

- Indian Hemp
- Female plant is taller, 4-6 meters, more darker and luxuriant foliage
- Active principles are in the resins
- CANNABINOL, CANNABIDIOL which on exposure to heat converted to THC TETRAHYDROCANNABINOLS
- All parts except stem, roots and seeds contain active principle
- CNS Stimulant
- Variously known as Pot, grass, dope, weed, hash, maryjone, M.J, hashish, bhang etc.
- THC is metabolised in liver, excreted in urine and feces

 BHANG (Siddhi, Sabji): Dried leaves and fruit shoots It is the mildest and contains 15% of Active principle Fresh bhang is highly intoxicating and narcotic
 MALOON: Sweet prepared with bhang, it increases the

- 2) MAJOON: Sweet prepared with bhang, it increases the apetite and sexual desire
- 3) GANJA: Prepared from flower tops of the female plant. It has rusty green colour and a characteristic odour.
 - Mixed and smoked with tobacco in a pipe or hukka

It contains 15 to 25% of Active principle

Ganja (Pot, grass, weed, maryjone, or marihuana) is used for smoking in cigarettes , which contains 0.3 to 0.6 gm cannabis and are known as REEFERS OR JOINTS. 4) CHARAS OR HASHISH: It is a resin (dope or s**t) exuding from the leaves and stem of the plant, and it It contains 25 to 40% of Active principle. It is dark green or brown in colour. Mixed and smoked with tobacco in a pipe or hukka. The smoke is inhaled deeply into the lungs and retained for as long as possible for potent effects.

SIGNS AND SYMPTOMS

- They appear soon after smoking and last for 1-2 hrs
- And within half hr of swallowing and last for 2-3 hrs
- Small doses: Euphoria, passivity, heightening of subjective experience and disorientation
- Moderate doses: Above effects are intensified with impaired immediate memory function, disturbed thought pattern, lapses of attention, and a subjective feeling of unfamiliarity
- High doses: Changes in body image, depersonalisation and marked sensory distortion

SYMPTOMS OF INTOXICATION

A) PSYCHIATRIC

1) Feeling of detachment, clarity, cleverness, disinhibition, depersonalisation, euphoria, elation, relaxation, well being, dreaminess, sleepiness, self confidence, jocularity, laughing, silliness, rapidly changing emotions

2) Thought processes: Irrelevant thoughts, altered reality testing, decreased conc and attention span, altered sense of identity, disorientation

3) Sensory novelty : vivid images, illusion, hallucinations

4) Feeling of precordial distress and tightness in chest

5) Altered concept of time and space: Change in body image, self confidence, altered sexual feelings

6) Maladaptive behavioural effects: impaired judgement, failure to meet responsibilities

7) Speech changes: Rapid, impaired, talkitive, flighty, poor immediate memory* (Trip)

B) PHYSICAL

Increased appetite, thirst, slight nausea, heaviness / pressure in the head, dizziness, dysesthesia, somnolence, paraesthesias, restlessness, ataxia, tremors, dry mouth, tachycardia, urinary frequency.

Sensitive individuals more affected

FATAL DOSE:

- Charas : 2 gm
- Ganja: 8 gm
- Bhang: 10gm/kg
- THC: 30mg/kg

FATAL PERIOD: Several days

TREATMENT

- 1) GL/ emesis, AC, Catharsis
- 2) 100ml of 50% glucose, 2mg naloxone and 100mg thiamine i.v
- 3) 5-10 mg diazepam
- 4) Assurance
- 5) If flashback occurs give antianxiety drugs
- 6) Psychotherapy

PM Appearences

CHRONIC POISONING

- Use of drug in small quantities even for long periods is not harmful
- Tolerance and psychological dependence develops
- Excess use cause degeneration of the CNS and insanity
- Serum testosterone decreases
- Loss of appetite, weakness, wasting, tremors, sleepy facial expressions, vacant look, red eyes
- Rarely pt becomes insane (hashish insanity)
- Auditory or visual hallucinations and delusions of persecution

Heavy marihuana users may develop manic or paranoid psychosis. The person may **"RUN AMOK"** i.e. he develops a psychic disturbance marked by a period of depression, followed by violent attempts to kill people (impulse to murder).

No physiological dependence

MLI

Poisoning due to overindulgence Accidental ingestion or inhalation Taken before crime to strengthen the nerves Road poisoners to stupify person for robbery Aphrodisiac and is supposed to increase the duration of coitus

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CAUSES OF DELIRIUM

- 1) METABOLIC: Hypoxia, co2 narcosis, Hypoglycemia, Hepatic encephalopathy, Cardiac failure, Cardiac arrhythmias, Cardiac arrest, Water and electrolyte disturbances, fever, anemia, hypovolemic shock, carcinoid syndrome.
- 2) ENDOCRINE: Hypo or Hyper Pituitarism/ thyroidism/ parathyroidism/ adrenalism
- 3) DRUGS: A) Digitalis, quinine ,anti HT
 - B)Alcohol, sedatives, Hypnotics
 - C) TCAD, antipsychotics , anticholinergics
 - D) Anticonvulsants, L Dopa, Opiates
 - E) Salicylates, steroids, penicillin, insulin, Heavy metals
 A) NUTRITIONAL DEFICIENCIES: Thiamin, niacin, pyridoxine, folic acid, vit. B12, proteins
 - 5) SYSTEMIC INFECTIONS: Acute and chronic

6) INTRACRANIAL CAUSES:

A) EPILEPSY

- B) HEAD INJURY, SAH, SDH
- C) MENINGITIS, ENCEPHALITIS
- D)MIGRANE, STROKE (acute stage), HT ENCEPHALOPATHY
- E) FOCAL LESIONS. Rt. PARIETAL LEESIONS

7) MISCELLANEOUS:

- i) Postoperative states (including ICU Delirium)
- ii) Sleep deprivation
- iii) Heat, Electricity, Radiation

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- 1) **Grandeur or exaltation:** A person imagines himself to be very rich while in reality he is a pauper. Seen in delirium tremens.
- 2) Persecution (paranoid): The person imagines that attempts are being made to poison him by is wife, son parents. Seen in paranoid schizophrenia, dementia and depression.
- 3) **Reference:** The person believes that people, things, events, etc., refer to him in a special way. He believes that even strangers in the street are looking at him and are talking about him, or items in the radio or newspaper are referring to him.
- 4) Influence: Occur in schizophrenia. The person complains that his thoughts, feelings and actions are being influenced and controlled by some outside agency, like radio, hypnotism, telepathy, etc.

- 5) Infidelity: A man imagines his wife to be unfaithful while in fact she is chaste.
- 6) Self reproach: The person blames himself for the past failures and misdeeds which are often of no importance.
- 7) Nihlistic: The person declares that he does not exist or that there is no world, etc.
- 8) Hypochondriacal: The person believes that there is something wrong with his body, though he is healthy.
- Other types: Jealousy, religion.

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Commonest hallucinations are:

- VISUAL- in organic mental disorders, and are present in delirium tremens, focal CNS lesions, toxic disturbances, schizophrenia, drug withdrawal syndromes
- AUDITORY- **in Functional disorders**, and are present in schizophrenia, delirium, psychotic mood disorders, and toxic and metabolic encephalopathies.
- Gustatory hallucinations are common in organic brain diseases, and temporal lobe epilepsy.
- Olfactory hallucinations are common in organic brain diseases, and major depression.
- Tactile hallucinations are common cocainism.
- Hallucinations also occur in fevers, intoxications, and insanity.

In command hallucinations, the patient is ordered by hallucinatory voices to do things/acts, which may be frightening or dangerous. They may be pleasant, but more often they are unpleasant

• A person may commit suicide/ homicide.

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