

Poisoning

Common poisoning in Medicine ward are

- * OPC poisoning
- * Sedative poisoning (diazepam, midazolam, amitriptyline, paracetamol etc)
- * Stupefying/street poisoning
- * Corrosive poisoning (dettol, herpic, savlon etc)

Management of some poisoning

Sedative poisoning

Diagnostic tools

1. History-name of the drug, amount, time of ingestion etc.
2. Patient may be disoriented or drowsy or in deep sleep.
3. Respiration is normal or depressed.
4. Planter reflex is normal or extensor.
5. Pupils mid dilated & sluggish reaction to light.

Management

1. NPO till recovery (usually 24 hours), if patient is in deep sleep.
2. Diet- normal, plenty of tea, coffee by mouth if patient can swallow.
3. O2 inhalation 1-4 L/minute, if respiration is depressed.
4. Infusion 5% DNS 1000 IV @ 20 drops/ minute.
5. Activated charcoal (Tab. ultracarbon 2+2+2), if patient present within 1 hour.
6. Antidote of benzodiazepine- flumazenil slowly IV, dose 0.2 mg over 30-60 seconds, repeated in 0.5 mg increments as needed up to a total dose of 3-5 mg.
7. Patient should be evaluated by a Psychiatrist (after recovery).

Pure sedative like diazepam, midazolam poisoning is not dangerous, patient usually recovered after 24 to 48 hours.

Flumazenil is usually not required.

Flumazenil is a benzodiazepine receptor-specific antagonist; it has no effect on ethanol, barbiturates or other sedative-hypnotic agents.

Flumazenil should not be used in patient with history of seizures or in patients with preexisting seizure disorder, toxin induced cardio toxicity, co-ingestion with TCA. The duration of action of flumazenil is short (2-3 hours) and resedation may occur, requiring repeated doses.

Activated charcoal: Activated charcoal effectively adsorbs almost all drugs and poisons. Poorly adsorb substances include iron, lithium, potassium, sodium, mineral acids and alcohol.

Tricyclic antidepressant poisoning (amitriptyline-tryptin, amilin etc)

Diagnostic tools

1. History-name of the drug, amount, time of ingestion etc.
2. Dilated pupil and retention of urine.
3. Respiration may be depressed.
4. Arrhythmias in ECG may be present.
5. Hypotension may occur.
6. Hyperreflexia with extensor plantar, coma and seizures.
7. Improvement can be expected within 24 hour.

Management

1. NPO till further order or recovery.
2. IV fluid infusion (5% DNS1000cc +5% DA1000cc IV @20 drops/minute stat & daily).
3. Gastric lavage may be given even after delayed presentation.
4. Tab. Ultracarbon 2+2+2
5. Treatment of arrhythmias.
6. If convulsion present diazepam and phenytoin.
7. ECG monitoring during the first 24 hours and until ECG changes have disappeared for 12 hours.
8. If acidosis present- IV sodibicarb.
9. Patient should be evaluated by a Psychiatrist (after recovery).

Note: Sodibicarb available at 7.5% 25 ml.

Tips:

- * Gastric elimination may be useful for 24 hour after ingestion because tricyclic is slow gastric emptying.
- * Cardiac arrhythmias are more common if there is acidosis. Bicarbonate should be used to achieve an arterial pH of 7.5 urgently.
- * If arrhythmias occur with no acidosis and fail to respond to treatment with amiodarone or phenytoin, bicarbonate (25-50 mL 8.4% IV) may still be useful within 20 minutes.
- * If VT compromising cardiac output, lidocaine 50-100 mg IV should be given.

Stupifying poisoning (unknown poisoning)

Diagnostic tools

1. History of poisoning during traveling or ingestion or inhalation of food or other substances by unknown person.
2. Patient in deep sleep or drowsy.
3. Pupil constricted or dilated and light reaction normal or absent.
4. Circulation (pulse & BP) usually normal.
5. Respiration normal.

(In OPC poisoning pupil is constricted, pulse <60 beats/minute (bradycardia), BP- hypotension & crepitation present in lungs).

Management (treatment is symptomatic and supportive)

1. NPO till further order.
2. IV fluid infusion (5% DNS1000cc +5% DA1000cc IV @20 drops/minute stat & daily).
3. Inj. omeprazole (40mg) 1 vial IV slowly over 10 minutes stat and daily.
4. Continued catheterization (antibiotic if catheterization is done)
5. Monitor vital signs.

Usually patient recover after 24 hours.

Corrosive poisoning (strong acid & alkali)

Management

1. NPO TFO.
2. Clearing of the airways.
3. O₂ inhalation 4-6 L/minute.
4. Irrigate exposed eyes with sterile cold water or saline at least for 20 minutes and continue until the patient returns to normal.
5. Infusion 5% DNS 1000 + 5% DA 1000 cc IV @ 20 drops/ minute.
6. Antibiotic like amoxicillin, levofloxacin etc.
7. Inj. omeprazole (40mg) 1 vial IV slowly over 10 minutes stat and daily.
8. Analgesic like tramadol HCl either IM or per rectal to relieve pain.
9. Patient should be evaluated by a Psychiatrist after recovery (in suicidal attempt cases).

Tips:

1. Dilution or neutralization, induction of emesis, gastric aspiration and lavage are contraindicated.
2. Emulcents- egg white, olive oil, butter, cold milk should be avoided.
3. As there is no specific antidote, symptomatic treatment is to be provided. Neutralization with alkali now a days is not done.
4. Surgical treatment must be considered for any patient with grade II or III esophageal injury.
5. Diagnostic endoscopy should be performed within 12-24 hours of alkali ingestion.
6. Corticosteroids have no role in the management of a case and complication. It is rather harmful.
7. Soluble calcium tablet followed by 10% ca gluconate IV can be given in acid ingestion.
8. 1% NaHCO₃ irrigation may be given in eye involvement with steroid eye drops.

Datura poisoning

Management

1. NPO TFO.
2. Stomach wash with in 1 hour.

3. Clearing of the airways.
4. O₂ inhalation 4-6 L/minute.
5. Infusion 5% DNS 1000 + 5% DA 1000 cc IV @ 20 drops/ minute.
6. Inj. omeprazole (40mg) 1 vial IV slowly over 10 minutes stat and daily.
7. Physostigmine 0.5 mg to 1 mg S/C stat.
8. Paracetamol suppository .
9. Tepid sponging.
10. Catheterization done for urinary retention (antibiotic if catheterization is done).
11. Patient should be evaluated by a Psychiatrist (in suicidal attempt cases).

Tips:

1. If stomach is full, no forceful emesis should be tried.
2. Specific antidote: (I) physostigmine 0.5 mg to 1 mg S/C to antagonise atropine in a single dose (II) prostigmine is more effective and less toxic than physostigmine in same dose. (III) pilocarpine 5 mg s/c, though useful, does not counteract the action of datura on brain, can be repeated 2 hourly at early stage of poisoning.
3. Delirium can be treated with short acting barbiturates.
4. To control marked excitement chloralhydrate or paraldehyde in moderate dose may be given.
5. Repeated purgation is not recommended.
6. Forced diuresis is not encouraged.
7. Light diet, mainly liquid or semi-liquid should be given if the condition is mild.
8. Other symptomatic treatments.

Methanol Poisoning

Management

1. NPO TFO.
2. Stomach wash with in 1 hour.
3. Clearing of the airways.

4. O₂ inhalation 4-6 L/minute.

5. Infusion 5% DNS 1000 + 5% DA 1000 cc IV @ 20 drops/ minute.

6. Inj. omeprazole (40mg) 1 vial IV slowly over 10 minutes stat and daily.

7. Antidote : Ethanol.

Loading dose: 10% ethanol 7.5 ml/kg IV over 30 to 60 mins

Maintaining dose: 10% ethanol 1.96 ml/kg/hr IV.

If IV not available, then Orally: 95% ethanol, 0.8 ml/kg followed by 0.1 ml/kg/hr can be given.

Maintaining dose : 0.2 ml/kg/hr. This alcohol should be diluted in water or fruit juice.

Tips:

1. Patient should be hospitalized and must be treated by an ophthalmologist for his visual problems.

2. Stomach wash although advocated, there is no evidence of affectivity with it.

4. In severe cases patient should be intubated and mechanical respiration should be given.

7. Acidosis should be controlled by infusing sodium bi-carbonate.

8. Sedation can be given cautiously to prevent delirium and restlessness.

9. The antidote for methanol poisoning is ethanol.

Puffer fish poisoning

Management

1. NPO TFO except medication.

2. Stomach wash with in 1 hour with 2% sodibicarb.

3. Clearing of the airways.

4. O₂ inhalation 4-6 L/minute.

5. Infusion 5% DNS 1000 + 5% DA 1000 cc IV @ 20 drops/ minute.

6. Inj. omeprazole (40mg) 1 vial IV slowly over 10 minutes stat and daily.

7. Tab. Ultracarbon 2+ 2 + 2

8. Atropinization and inj. neostigmine has been used for come round from unconsciousness and restoring neurogenic power both sensory and motor.

Tips:

There is no specific antidote, so only symptomatic treatment

1. Artificial respiration with oxygen inhalation by mask in mild cases and direct ventilatory support and sedation in severe cases.
2. Purgation and forced diuresis to lessen absorbed poison is not recommended.
3. Steroids for life saving measure although contraindication persists.

Opiate Poisoning

Management

1. NPO TFO except medication.
2. Infusion 5% DNS 1000 cc + 5% DA 1000 cc IV @ 20 drops/minute.
3. Tab Ultracarbon 2 + 2 + 2
4. Inj. omeprazole (40mg) 1 vial IV slowly over 10 minutes stat and daily.
5. Naloxone can be given to reverse the sign of severe poisoning (coma, respiratory depression or convulsion) within a few minutes but it has a short life and the patient may relapse.

Dose: Administer 0.4-2 mg intravenously, and repeat as needed to awaken the patient. Very large doses (10-20 mg) may be required for patients intoxicated by some opioids (eg, propoxyphene, codeine, fentanyl derivatives).

Caution: The duration of effect of naloxone is only about 2-3 hours; repeated doses may be necessary for patients intoxicated by long-acting drugs such as methadone. Continuous observation for at least 3 hours after the last naloxone dose is mandatory.

6. Patient should be evaluated by a Psychiatrist (in suicidal attempt cases).

Paracetamol Poisoning

Management

1. NPO TFO except medication.
2. Infusion 5% DNS 1000 cc + 5% DA 1000 cc IV @ 20 d/minute.
3. Tab ultracarbon 2 + 2 + 2

4. Inj. omeprazole (40mg) 1 vial IV slowly over 10 minutes stat and daily.
5. Broad spectrum antibiotic (because sepsis is common in liver failure)
6. Special antidote: N-acetylcysteine (NAC), methionine.

Dose:

- * Adult: 150 mg/kg IV in 200 ml of 5% DA over 15 minutes, followed by
- * 50 mg/kg IV in 500 ml dextrose over 4 hours, followed by
- * 100 mg/kg IV in 1000 ml 5% DA over 16 hours.

With established hepatotoxicity, continue NAC treatment 50 ml/kg in 500 ml of 5% DA over 8 hours.

Repeat until prothrombin time and liver enzyme begin to return to normal.

Patient should be evaluated by a Psychiatrist (after recovery).

Savlon poisoning

Diagnostic tools

1. History of ingestion of savlon.
2. Burning sensation in throat and upper abdomen.

Management

1. NPO till further order except medication.
2. Irrigate exposed eyes with sterile cold water or saline at least for 20 minutes and continue until the patient returns to normal.
3. Inj. omeprazole (40mg) 1 vial i/v slowly over 10 minutes stat and daily.
4. Antibiotic
5. IV infusion 5% DNS 1000 + 5%DA 1000 IV @ 20 drops per minute stat and daily.
6. Patient should be evaluated by a Psychiatrist (after recovery).

OPC poisoning

Diagnostic tools

1. Patient present with history of intake of poisonous substance, patient usually unconscious, may be drowsy.
2. On examination-pulse bradycardia, BP-low, lungs-ronchi and creps present (this 3 features differentiate OPC poisoning from sedative and stupefying poisoning).

Management

1. External decontamination with water.
2. Remove contaminated clothing. Avoid contamination with other personnel.
3. Gastric lavage if patient present within 1 hour.
4. NPO TFO.
5. O₂ inhalation 4-6 L/minute.
6. Tab Ultracarbon 2 + 2 + 2 if present within 1 hour.
7. Assisted ventilation if respiratory failure.
8. Infusion 5% DNS 1000 cc + 5% DA 1000 cc IV @ 20 drops/minute.
9. Antibiotic
10. Inj. omeprazole (40mg) 1 vial i/v slowly over 10 minutes stat and daily.
11. Atropine (2 mg IV) should be administered and this dose should be doubled every 5–10 minutes until clinical improvement occurs (further bolus doses should be given until secretions are controlled, the skin is dry, blood pressure is adequate and heart rate is > 80 beats/minute).
12. Pralidoxime chloride 2 gram IV over 4 minutes, repeated at 4-6 hourly.
13. Continued catheterization.
14. Monitor vital sign.
15. Patient should be evaluated by a Psychiatrist (after recovery).

Poisonous snake bite

In case of snake bite if patient develops sign of envenomation like ptosis, dysphagia, ophthalmoplegia, broken neck sign, any local swelling, bleeding manifestation (haematological) then polyvalent antsnake venom should start as soon as possible.

Polyvalent antsnake venom is effective against the following snake's venom

1. Cobra
2. Krait
3. Russel's viper
4. Saw scaled viper

Management of snake bite

Snake bite patient should be assessed as follows

1. Patient should be advised to admit in hospital, reassurance should be given.
2. Look for any non-scientific first aid like tight arterial ligature, incisions etc. If any tight arterial ligature, then it should be released after admission and advice to not move the bitten part or limb.
3. Time of bite-if 24 hours passed after snake bite and no features of envenomation, then there is no risk of the patient and can safely be discharged.
2. If bite time less than 24 hours then assess the patient for any signs of envenomation. If there is no sign of envenomation then he should be monitored for 24 hours (from bite time).
3. Ask whether snake was seen or not? if seen then what is the name of the snake? In case of identified non-poisonous snake monitor for 24 hours is also necessary.
4. During monitor 20 minutes whole blood coagulation test should be done at initial evaluation and before discharge.
5. If patient develop any sign of envenomation then manage as follows
 - i) Polyvalent antsnake venom-10 vial + 100 cc 5% DNS or NS IV @ 60 drops/minute, start infusion at a lower rate for first 10-15 minutes. Before initiating antivenom, prophylactic subcutaneous adrenaline (dose-adult 0.25 ml of 0.1% solution and in children 0.005 mg/kg) should be given to the victim. Antisnake venom can be repeated if-no improvement or deterioration after 1-2 hours and persistence or recurrence of blood incoagulability after 6 hours.
 - ii) If neurotoxic features- Inj. atropine 1 amp IV stat. & 4 hourly, inj. Neostigmine 4 amp S/C 15 minutes after atropine injection and then 4 hourly.
 - iii) If features of respiratory failure-endotracheal intubation.
 - iv) Antibiotic- if risk of infection or endotracheal intubation done.
 - v) Follow up 15-30 minutes interval by- pulse, BP, respiratory rate, respiratory movement, adverse effects of antivenom.

vi) In case of haemostatic abnormalities

- Strict bed rest

- Avoid I/M injection.

- Fresh blood transfusion.

- Avoid NSAID or Aspirin for pain.

6. Inj. TT & TIG.

7. IV infusion of dextrose saline if patient cannot take oral food.