induced emesis: used primarily for small children soon after ingestion; however, it seems to be falling out of favour even in that group.

gastric lavage: exact role has not been established; however, it may be useful within 4 hours of ingestion of potentially lethal quantities of a drug. It should not be given when ingestion of corrosives, caustics, acids or petroleum derivatives is suspected.

- technique involves placing the patient in the semiprone position with the head dependent. A large bore nasogastric tube is inserted to aspirate the stomach. Water is inserted (1ml/kg) at body temperature and that amount is then recovered before more is instilled. Cycles are repeated until the return water is clear.

whole bowel irrigation: some agents such as polyethylene glycol electrolyte solutions can decrease drug adsorption by decreasing the time for the drug to transit the gut. They can be useful for purging intact tablets from the gut (eg in cases of iron poisoning).

- it is suited for conscious patients who have ingested tablets that do not disintegrate in the gastrointestinal tract and can be identified on a plain radiograph.
- because polyethylene glycol will bind to charcoal, the two should probably not be used together.
- come as commercially available water soluble powders (eg Gin-lax) to be dissolved in about 4L of water. For adults 1-4L/hr should be given until the patient passes clear fluid from the bowel (usually after 3-5L).

forced alkaline diuresis:

- urinary alkalisation is the administration of intravenous sodium bicarbonate to increase urine pH to >7.5 or higher.
- should only be considered when drug absorption is expected to be high and there is a high likelihood of impaction in the renal tubules.
- can cause dehydration, hypokalaemia & pulmonary oedema.
- urinary alkalisation should be considered as the first line treatment in patients with moderately severe salicylate poisoning who do not meet the criteria for haemodialysis and in those with severe 3,4-dichlorophenacyl acetate or mecoprop (MCP) poisoning.

haemoperfusion:

- haemoperfusion involves passing the patient's blood through a device containing charcoal or adsorbent particles such as resin columns.
- no clear data demonstrate a benefit for haemoperfusion; however it is useful in serious overdoses of: (i) thalidomide (acute >440mcml/L; chronic >330mcml/L; lower threshold if age >60, IHD, seizure) (ii) barbiturates (iii) phenytoin (iv) carbamazepine

multiple dose activated charcoal:

- Multiple-dose activated charcoal is the repeated oral administration of activated charcoal to enhance drug elimination. If the drug concentration in the gut is lower than that in the blood, the drug will passively diffuse back into the gut. The concentration gradient, intestinal surface area, permeability, and blood flow determine the degree of passive diffusion. As the drug passes continuously into the gut, it is adsorbed to charcoal, a process called "gastrintestinal dialysis."
- Multiple-dose activated charcoal also interrupts the enterohepatic and enteroenteric circulation of drugs.
- Drugs with a prolonged elimination half-life, a small volume of distribution (less than 1 L/kg), and little protein binding are the most amenable.
- should be considered if a patient has ingested a life-threatening amount of carboanhydrase, dopamine, phenobarbitone, quinine, or theophylline. With all of these drugs, data confirm enhanced elimination, although no controlled studies have demonstrated clinical benefit.
- The initial dose of charcoal 50 to 100 g, and this treatment is followed every 1, 2, or 4 hours by equivalent amounts of 12.5 g/hour.
- Addition of a cathartic (eg, sorbitol) may be considered for the initial one or two doses.
- Continuous use of a cathartic can cause diarrhoea and fluid and electrolyte imbalance.
- Multiple-dose activated charcoal may be continued until the patient improves clinically.

haemodialysis:

- effective mainly for low molecular weight drugs that are not effectively bound to plasma proteins and have a small volume of distribution.
- can be useful for potentially lethal doses of specific drugs such as lithium, amphotericin and salicylates.

hyperthermia:

- hyperthermia is common after poisoning but it rarely requires active measures; it is a marker of increased risk for malnutrition & aspiration as a result of coma.
- hyperthermia is uncommon and sometimes associated with TCAs, antipsychotics, antihistamines, amphetamines, cocaine, phenytoin & salicylates; it may occur as a result of infection due to aspiration.
- seizures can occur as a direct result of poison and may be difficult to control.
- seizures can occur in association with venoms, venomous snakes, TCAs & theophylline. Seizures can also occur as an indirect result of the poison (eg hypoglycaemia, hyperpyrexia or as a result of global ischaemia).

myoclonus:

- myoclonus usually occurs in association with pressure receptors. It can complete narcotic & cocaine abuse without coma; however, it should always be suspected a patient with prolonged coma.
- a chest X-ray should be obtained to detect aspiration due to coma and depressed reflexes & to detect atelectasis.