Management of Poisoning

Absorption Inhibition

Decontamination = Removal of toxin from body before absorption

<table>
<tr><th colspan="5">Surface Decontamination</th></tr>
<tr><td>Skin</td><td colspan="4">• Corrosive agent rapidly injures and must remove immediately to prevented systemic absorption
• Care providers have to Wear protective gear (gloves, gown, and goggles) and wash exposed areas promptly
• Remove contaminated clothing and flush exposed areas
• ttt: Topical treatment</td></tr>
<tr><th>Corrosive Agent</th><th>Systemic Symptoms</th><td rowspan="4"></td><th>Corrosive Agent</th><th>Systemic Symptoms</th></tr>
<tr><td><u>Hydrofluoric acid</u>
ttt: Ca soaks</td><td>Hypocalcemia, hyperkalemia</td><td>Phenol
ttt: mineral oil, isopropyl alcohol</td><td>Seizures; coma; hepatic and renal damage</td></tr>
<tr><td><u>Oxalic acid</u>
ttt: Ca soaks</td><td>Hypocalcemia; renal failure</td><td>Picric acid</td><td>Renal injury</td></tr>
<tr><td><u>Permanganate</u></td><td>Methemoglobinemia</td><td>Tannic acid</td><td>Hepatic injury</td></tr>
<tr><td></td><td></td><td></td><td>Phosphorus
ttt: Copper sulfate 1%</td><td></td></tr>
<tr><td>Eyes</td><td colspan="4">• Cornea is the most sensitive to corrosive Agent and hydrocarbon solvents that may rapidly damage the corneal surface and <u>lead to permanent scarring.</u>
• Have to remove the victim’s contact lenses.
• At least 1 L to irrigate each eye.
• Examination of the eye by using fluorescein dye and a Wood’s lamp to reveal corneal injury.</td></tr>
<tr><td>Inhalation</td><td colspan="4">• Injure the pulmonary system
• Care providers should have adequate respiratory protection.
• Observe closely of upper respiratory tract edema 6-12 hours to cover late onset symptoms.
• Observe for late-onset noncardiogenic pulmonary edema
• Early signs and symptoms include dyspnea, hypoxemia, and tachypnea</td></tr>
</table>

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GI Decontamination				
Method	**Definition**	**Indication**	**Contraindications**	**S.E**
Emesis	Induction of vomiting by syrup of ipecac and the effect occurs with 20-30 min **Technique:** 30 ml orally and then give 2-3 glasses of water. Patient need to move to stimulates vomiting Can take 2nd dose if need.	• Prehospital treatment. **Rare used**, **prefer activated charcoal** • For Agent not absorbed by Activated charcoal (Iron, Lithium, potassium) **Rare used, prefer whole-bowel irrigation.**	• Obtunded • Comatose • Convulsing patient • Ingestion of corrosive agent • Ingestion of simple aliphatic hydrocarbon. Kerosene, Benzen • Ingestion hydrocarbon with systemic toxicity. **Prefer activated charcoal with or without gastric lavage.** • **Ingestion of substant cause CNS depression seizer within short time.** **Opioid, Sedative, Hypnotic, TCA, Cocaine, Isoniazid, Camphor.** • Children under 6 M because gag reflex can cause Aspiration	• Persistent vomiting may delay administration of activated charcoal or oral antidote. • Haemorrhagic gastritis • Mallory-Weiss tear • Promote passage of toxic marital to small intestine. • Drowsiness • Diarrhea • Repeated use cause cardiac toxicity.
Gastric Lavage	Invasive procedure common used in ER	• Effective if start within 30-60 min. • To administer activated charcoal and whole-bowel irrigation solution by gastric tube. • To dilute and remove corrosive liquids. • To empty the stomach in preparation for endoscopy.	Does not remove sustained release or enteric coated products. **Use whole-bowel irrigation.** • Obtunded (endotracheal intubation is mandatory to protect the airway. • Comatose • Convulsing patient	• **Perforation of the esophagus or stomach.** • **Nose bleed** from nasal trauma during passage of the tube. • Inadvertent **tracheal intubation.** • Vomiting resulting in **pulmonary aspiration** of gastric contents in an Obtunded patient without airway protection.

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Activated charcoal Effective alone	Highly adsorbent of most toxins and large surface area. **1 g/ kg PO or Gastric tube**	• Unknown substances • Co-ingested substants • Repeated dose(/ 2hrs) remove medication from bloodstream.	Poorly adsorbed **CHARCOAL** • **C**yanide and **C**orrosives. Still be given because usual doses of charcoal (60–100g) will adsorb usual lethal ingested doses of cyanide (200–300 mg). • **H**eavy metals (Iron, Lead, Arsenic, Lithium). • **A**lcohols. • **R**apid onset or absorption (Strychnine). • **C**hlorine. • **O**thers insoluble in water (substances in tablet form). • **A**liphatic hydrocarbons. • **L**axatives (magnesium and potassium)	• Constipation Treat with sorbitol which can cause serious fluid shifts to intestate, diarrhea and dehydration
Cathartics	Enhance elimination by 70% sorbitol 1-2 ml/ kg with active charcoal			
Whole bowel irrigation Similar to Gastric Lavage	Polyethylene glycol ½ L for child and 1 L for adult / 1-2 hr PO or GT until pass through intestinal tract without substant.	• Poorly adsorbed **CHARCOAL** • Large ingestions of sustained-release or enteric-coated tablets • Ingestion of foreign bodies or drug-filled packets or condoms	• Obtunded (endotracheal intubation is mandatory to protect the airway. • Comatose • Convulsing patient • Intestinal obstruction.	
Oral binding agents				
Surgical removal and Endoscopy				