29. Poisoning

This clinical pathway is intended to supplement, rather than substitute for, professional judgment and may be changed depending upon a patient's individual needs. Failure to comply with this pathway does not represent a breach of the standard of care.

Decontamination

Activated Charcoal

Indications	Contraindications/Not helpful/Caution	Dosing
Use **ONLY** within **ONE HOUR** of ingestion of a potentially toxic amount of medication. It is **NOT effective** beyond this period unless in multi-dose indications. **Multiple-dose** (**30gm** in 400mls **4-6hrly**) activated charcoal should only be considered if a patient has ingested a life-threatening amount of; **Theophylline, Phenobarbital, Dapsone Carbamazepine, or Quinine.** (Mnemonic - **T**hese **P**eople **D**rink **C**harcoal **Q**uickly)	**P**–**P**esticides, **P**etroleum distillated, un**P**rotected airway; **H**–**H**ydrocarbons, **H**eavy metals, greater than 1 **H**our; **A**–**A**cids, **A**lkali, **A**lcohols, **A**ltered level of consciousness, **A**spiration risk; **I**–**I**ron, **I**leus, **I**ntestinal obstruction; **L**–**L**ithium, **L**ack of gag reflex; **S**–**S**olvents, **S**eizures. (Mnemonic - **PHAILS**)	The optimal dose of charcoal is unknown. However, the adult dose ranges from 50 to 100 g per dose. Lower doses of **0.5-1gm/kg** is used in children. When drug-induced vomiting is anticipated (for example, with a theophylline overdose), an **IV antiemetic is recommended.** Cathartics such as sorbitol are sometimes added to activated charcoal preparations, but there is **no evidence of any additional clinical benefit**.

Gastric Lavage SHOULD NOT BE PERFORMED

Clinical studies have failed to show that gastric lavage improves the severity of illness, recovery times, or the ultimate medical outcomes and may be associated with life-threatening complications (aspiration pneumonitis, oesophageal or gastric perforation, fluid and electrolyte imbalances, arrhythmia).

Antidotes

Antidote	Indications	Dose	Comments
N-acetylcysteine (NAC)	If it is likely that the patient has ingested **> 150 mg/kg (or >10 g)** of paracetamol In contrast, NAC is **not recommended** for patients with; an **unknown ingestion time,** a paracetamol concentration below detectable limits along with normal AST levels.	**150 mg/Kg IV** over **1 hr** then **50mg/Kg** over the next **4 hrs** then **100mg/Kg** over the next **16hrs** IV NAC should be infused as a 3% solution (30 g of NAC in D5W to a total volume of 1 L	Anaphylactoid reaction if given too fast
Atropine	Organophosphate/Carbamate poisoning causing rhinorrhoea, lacrimation, dyspnoea, vomiting, fasciculations, weakness, inability to ambulate, convulsions, respiratory insufficiency, coma. Miosis alone is **not** an indication for atropine administration.	**2mg IV** repeated **every 5 minutes** until the therapeutic endpoint is reached i.e. until pulmonary secretions are dried [reflected by improved oxygenation] and ease of breathing [or ease of ventilation].	Excessive doses of atropine can result in delirium, agitation, and tachycardia and hypertension. Tachycardia is **not** a contraindication to atropine administration.
Ethanol	Ethylene Glycol or Methanol poisoning	**PO:** **Loading dose:** 0.8g/kg in a 20% ethanol solution diluted in juice. **Maintenance dose:** 80mg/kg/h; increase to maintain a serum ethanol concentration of 100- 150mg/dL. **IV:** **Loading dose:** 0.6 - 0.8 g/kg in a 10% ethanol solution in D5W (volume/volume). **Maintenance dose:** 80 to 130 mg/kg/h Higher maintenance doses are used in patients with chronic alcoholism or during haemodialysis.	
Flumazenil	Excessive sedation known to be due to the use of benzodiazepines in a patient without known contraindications (e.g., procedural sedation).	**10µ/kg IV over 15 seconds**. Repeat **every 2-3mins** to a maximum of **1mg** (usual range 0.3 to 0.6mg).	The administration of flumazenil to patients with undifferentiated coma can precipitate seizures in benzodiazepine-dependent patients and has been associated with seizures, arrhythmia, and hypotension in patients with co-ingestion of certain medications, such as tricyclic antidepressants.
Naloxone	Respiratory depression secondary to an opioid overdose	Dilute one ampoule (0.4mg/ml) into 10ml (0.04mg/ml), and give 1 ml every 1 to 2 minutes. A therapeutic effect is usually seen after 3 to 4 ml	Rapid injection may result in an acute withdrawal syndrome, with severe sympathetic effects such as hypertension, tachycardia and pulmonary oedema - can precipitate a myocardial infarction in patients at risk of IHD.