Colchicine

Overview

Uncommon but potentially lethal. Toxicity characterised by GIT symptoms and delayed multi-organ failure.

Toxic mechanism

Colchicine acts by preventing formation of microtubules & so inhibits cell division, intracellular transport of vesicles and proteins, flagella reassembly, and the amoeboid motility of cells. This is beneficial when therapeutically reducing macrophages/leukocytes function in inflammation, but in overdose other tissues with high cell turnover (GIT, marrow) are adversely affected.

Toxicokinetics

Rapid oral abs. Extensive 1st pass met. Highly tissue bound with VD=2L/kg. Hepatic met. Elim. $T_{\frac{1}{2}}$ ~30hr in OD.

Clinical features

Time	Effect
2-24hr	↑WCC, N, V, D, abdo pain. Severe losses → ↓BP
2-7 days	Bone marrow suppression & pancytopenia Rhabdomyolysis, RF, progressive met. acidosis. Respiratory failure, ARDS, arrhythmias. Also rashes. Death risk highest.
>7 days	Rebound ↑WCC & transient alopecia, recovery.

Investigations

Deliberate OD screening tests: ECG, BSL, paracetamol level.
Specific, if symptomatic: FBC, UEC, ABG, CXR, plus others as indicated by organ failure.

Risk assessment

Dose	Effect
<0.5mg/kg	GIT symptoms
0.5-0.8mg/kg	Systemic & bone marrow toxicity ~10% mortality
>0.8mg/kg	Shock, coagulopathy, ARF Approaches 100% mortality

Management

Resuscitation: Usual ABCs. Early ICU & ventilatory/cardiovascular supportive care for severe poisoning.
Supportive: Fluids, infection control, close (±invasive) monitoring.
Decontamination: Activated charcoal 1g/kg (max 50g) PO ASAP (any reduction in dose may be beneficial).
Elimination: Multidose activated charcoal has been used as colchicine undergoes enterohepatic circulation, but difficult if vomiting+ and little evidence that it affects outcome.
Antidotes: Colchicine antibodies are not generally available. ?**G-CSF** in severe leucopenia.

Disposition

Admit all cases and discharge if don't develop GIT symptoms at 24hrs.
Early transfer to ICU if >0.5mg/kg ingested.