Metformin

Overview
Lactic acidosis toxicity may occur with large OD or therapeutic doses if renal failure develops, but hypoglycaemia is rare. Haemodialysis may be life-saving.

Toxic mechanism
Inhibits gluconeogenesis, ↓hepatic glucose release & ↑peripheral uptake.

Toxicokinetics
Well abs. Peak levels @2h. Not metabolised – renally excreted.

Clinical features
Usually asymptomatic. May have GI upset.
Lactic acidosis may → altered LOC, ↑RR, ↑HR, ↓BP, poor perfusion, coma
Occ. mild hypoglycaemia.

Investigations
Screening: ECG, paracetamol, BSL
Specific bloods: ABG, lactate, UEC

Risk assessment
Mortality >50% in metformin lactic acidosis assoc with RF.
Toxic OD probably >10g (child >1.7g) in absence of RF.

Management
Resus: ABCs
Supportive Care: **Bicarbonate** may temporise severe acidosis until haemodialysis available.
Decontamination: Charcoal if <2hr post OD>10g (child 1.7g).
Enhanced Elimination: Haemodialysis if pH falling or lactate rising (removes metformin & corrects acidosis).

Disposition
If <10g (child 1.7g) then may be d/c. If more ingested, obs for 8hr and d/c if well & normal bicarbonate. Otherwise admit. ICU if haemodialysis reqd.