Paracetamol Poisoning

**Liver damage**
- Occurs because toxic metabolite depletes hepatic stores of glutathione which normally conjugates the metabolite and makes it harmless
- Unlikely if <150mg/kg paracetamol taken (ie 20 x 500mg tabs in 70kg patient) unless high risk when >75mg/kg can be harmful
- At risk groups include enzyme inducers eg on anticonvulsants or heavy drinkers; or glutathione depletion eg eating disorders, cyanotic heart disease, children

**Presentation within 4 hours of overdose**
- Activated charcoal if >150mg/kg within 1-2 hours
- Wait until 4 hours from OD then check plasma paracetamol
- Give Parvolex if level above treatment line (fig 1)
- If parvolex started within 10 hours of OD, risk of liver or renal damage is insignificant and patient can be discharged once parvolex complete

**Presentation 4-8 hours after overdose**
- Too late for charcoal
- Measure plasma paracetamol level and give parvolex
- Do not delay if >12g paracetamol ingested and plasma level will not be available within 10 hours (treatment must start within 10 hours for maximum protection)

**Presentation 8 – 15 hour after overdose**
- Give parvolex immediately – do not wait for level
- Measure plasma paracetamol level
- Stop parvolex if level below treatment line
- If parvolex continued, liver function (LFT and coag), renal function (U&E) must be monitored, sometimes for up to 3-4 days
- Safe to discharge after parvolex if INR <2 and not rising, no renal failure and patient is asymptomatic.
- Otherwise wait until INR falling before sending home
- If liver damage has occurred advise patient not to drink alcohol for 6 months

**Presentation 15 – 24 hours after overdose**
- Give parvolex immediately if likely that ≥12g ingested
- Measure plasma paracetamol, U&E, LFT and INR
- Parvolex may be stopped and patient sent home if at 24 hours after ingestion patient is asymptomatic and INR and creatinine are normal and paracetamol level is <10mg/l
- Otherwise wait until INR and creatinine are falling
**Paracetamol Poisoning (continued)**

### Presenting more than 24 hours after overdose
- This is a controversial area
- Check U&E, LFT, INR and arterial pH
- Use of parvolex controversial
- Discuss with Poisons Unit

### Adverse reactions with parvolex
- 1 in 10 may develop anaphylactoid reaction (flushing/rash) within 1 hour of parvolex administration
- Stop infusion for 30 minute and recommence at 50mg/kg rate. Give 2mg IV Piriton if required
- Give subcut adrenalin and neb. Bronchodilators for bronchospasm
- Consider oral methionine if within 10-12hours and patient not vomiting

### Incipient liver failure
- If PT >36s (INR >3) at 36 hours there is a 50% risk of fulminant hepatic failure
- H+ >50 and creatinine >300umol/l also predict liver failure
- Beware hypoglycaemia as cause of coma early in course of extensive hepatic necrosis
- Give lactulose as prophylaxis against encephalopathy when INR >2
- Give vitamin K 10mg IV once only
- Peak liver necrosis will be reached 72 –96 hours after ingestion. If INR falling by this time, can go home when medically fit
- If INR deteriorating with signs of encephalopathy, discuss with Liver Unit at Edinburgh royal Infirmary (short code **026)**

### Incipient renal failure
- Albuminuria and microhaematuria in first 24 – 36 hours suggestive of incipient renal failure
- Serum creatinine better marker of renal failure than urea when liver damage present
- Keep careful fluid balance
- Monitor creatinine daily
- If develops ARF refer to the Renal Unit
- Peak renal necrosis at 72 to 96 hours. If no organ damage by this time patient can be discharged

### Psychiatric assessment
- Must preceed discharge
- Ideally should occur within 24 hours of referal