Paracetamol poisoning
Proforma to guide ED management of ORAL ingestions in adults
Includes overdoses due to therapeutic excess
Manage and document any co-ingestions separately

Read me first
Main effects of Paracetamol poisoning are delayed-onset liver and kidney damage. The antidote N-Acetylcysteine (NAC) is very effective, but its protective effects decline rapidly if started >8h of a single ingestion. Management of Paracetamol overdose has changed in Sep12 following a review by the Commission on Human Medicines (CHM):
• All ingestions >75mg/kg are significant (NB: In patients weighing <54kg, taking even the standard dose of Paracetamol 1G QDS will result in therapeutic excess!)
• Assessment for risk factors of hepatotoxicity is no longer required
• The 1st bag is now run over 1h (previously 15min) to reduce anaphylactoid reactions

Sources of further advice
• www.toxbase.org has complete online management guidance for Paracetamol poisoning, including IV and other routes
• National Poisons Information Service (NPIS) is available anytime if remaining uncertainties after advice from ED senior (0844 892 0111)
• Liver unit referrals should be made to the 'liver unit medical registrar' at the Queen Elizabeth Hospital Birmingham (0121 627 2000)

Significant ingestion?
Work out ingested dose in mg/kg

Paracetamol level high?
YES, as one of the below
4-15h after single ingestion, level on or above treatment threshold
>15h after single ingestion Paracetamol still detectable
>24h after last tablets of a staggered ingestion taken Paracetamol still detectable

No, as none of the above

Single ingestion >36h ago
If jaundice or liver tenderness
• Start NAC immediately (do not wait for blood results) and admit to AMU.
• NB: check if referral to a liver unit is required (see box 7 for criteria)
Otherwise await blood results and then
1. If ANY of the below
   • Paracetamol still detectable
   • ALT >1495U/L
   • INR >1.2 AND ALT elevation
   • Start NAC and admit to AMU
   • NB: check if referral to a liver unit is required (see box 7 for criteria)
2. If INR >1.3 but ALT normal
   • Look for other causes (discuss with ED senior then call NPIS if in doubt)
3. If none of the above
   • Admit to ED and repeat all blood tests (apart from Paracetamol level) after 12h unless ingestion >48h ago AND
   • ALT <150U/L AND INR <1.4
   • No more bloods needed, otherwise manage as per 1. & 2. above
**NAC regimen**

- N-Acetylcysteine (NAC) ampoules contain 2G NAC in 10mL (200mg/mL)
- Regimen consists of 4 infusions given consecutively over 21h
- Tick applicable weight range (in pregnancy, here: **ACTUAL** weight)
- Prescribe NAC on fluid page of drug chart as per example in box 9

### NAC example prescription

For 62kg patient as per table in box 8

<table>
<thead>
<tr>
<th>Drug</th>
<th>Amount</th>
<th>Type</th>
<th>Strength</th>
<th>Volume</th>
<th>Infusion</th>
<th>N or 8G</th>
<th>Time</th>
<th>Start Time</th>
<th>Time to run or mL/hr</th>
<th>Fluid Batch No</th>
<th>Prescriber</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-Acetylcysteine</td>
<td>880mg = 49mL</td>
<td>Glucose</td>
<td>5%</td>
<td>200mL</td>
<td>9</td>
<td>IV</td>
<td>HH:MM</td>
<td>230mL/hr (i.e. runs over 1h)</td>
<td></td>
<td>Dr.'s Name</td>
<td></td>
</tr>
<tr>
<td>N-Acetylcysteine</td>
<td>1400mg = 77mL</td>
<td>Glucose</td>
<td>5%</td>
<td>300mL</td>
<td>9</td>
<td>IV</td>
<td>HH:MM</td>
<td>125mL/hr (i.e. runs over 4h)</td>
<td></td>
<td>Dr.'s Name</td>
<td></td>
</tr>
<tr>
<td>N-Acetylcysteine</td>
<td>1400mg = 77mL</td>
<td>Glucose</td>
<td>5%</td>
<td>300mL</td>
<td>9</td>
<td>IV</td>
<td>HH:MM</td>
<td>64mL/hr (i.e. runs over 8h)</td>
<td></td>
<td>Dr.'s Name</td>
<td></td>
</tr>
<tr>
<td>N-Acetylcysteine</td>
<td>1400mg = 77mL</td>
<td>Glucose</td>
<td>5%</td>
<td>500mL</td>
<td>9</td>
<td>IV</td>
<td>HH:MM</td>
<td>64mL/hr (i.e. runs over 8h)</td>
<td></td>
<td>Dr.'s Name</td>
<td></td>
</tr>
</tbody>
</table>

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**Blood results**

- Liver unit referral criteria (NB: also include hepatic encephalopathy >grade II)
  - INR
  - APTT
  - Prothrombin time
  - pCO₂
  - Bicarb
  - Lactate
  - Glucose

* >3 after fluid resuscitation/24h post-ingestion

**Paracetamol**

- Na
- K
- Urea
- Creatinine
- Bilirubin
- ALT
- Alb
- AP
- WBC
- Hb
- Platelets