Paracetamol overdose: Texts

Text A

Paracetamol: contraindications and interactions

4.4 Special warnings and precautions for use

Where analgesics are used long-term (>3 months) with administration every two days or more frequently, headache may develop or increase. Headache induced by overuse of analgesics (MOH medication-overuse headache) should not be treated by dose increase. In such cases, the use of analgesics should be discontinued in consultation with the doctor.

Care is advised in the administration of paracetamol to patients with alcohol dependency, severe renal or severe hepatic impairment. Other contraindications are: shock and acute inflammation of liver due to hepatitis C virus. The hazards of overdose are greater in those with non-cirrhotic alcoholic liver disease.

4.5 Interaction with other medicinal products and other forms of interaction

- Anticoagulants – the effect of warfarin and other coumarins may be enhanced by prolonged regular use of paracetamol with increased risk of bleeding. Occasional doses have no significant effect.
- Metoclopramide – may increase speed of absorption of paracetamol.
- Domperidone – may increase speed of absorption of paracetamol.
- Colestyramine – may reduce absorption if given within one hour of paracetamol.
- Imatinib – restriction or avoidance of concomitant regular paracetamol use should be taken with imatinib.

A total of 169 drugs (1042 brand and generic names) are known to interact with paracetamol.
14 major drug interactions (e.g. amyl nitrite)
62 moderate drug interactions
93 minor drug interactions

A total of 118 brand names are known to have paracetamol in their formulation, e.g. Lemsip.

Text B

Procedure for acute single overdose

Acute single overdose

Establish time since ingestion

<4 hours

- Check paracetamol level at 4 hours
- Plot level against time on the relevant nomogram
- Start acetylcysteine if on or above treatment line

<1 hour since ingestion and >75mg/kg taken: consider activated charcoal

4-8 hours

- Check immediate paracetamol level. If level will not be obtained before 8 hours after ingestion: start acetylcysteine pending the result
- Plot level against time on the relevant nomogram
- If level is below treatment line: stop acetylcysteine

- Start acetylcysteine immediately
- If level on or above paracetamol graph treatment line: continue acetylcysteine

- Check paracetamol level and measure AST/ALT

8-24 hours

- If paracetamol level >5mg/L or AST/ALT increased or any evidence of liver or renal dysfunction: continue acetylcysteine

>24 hours or unable to establish

- Start acetylcysteine

Patient needs treatment with acetylcysteine?

No
Supportive treatment only

Yes

Check AST/ALT, INR/PT, serum electrolytes, urea, creatinine, lactate, and arterial pH and repeat every 24 hours
Clinical Assessment

- Commonly, patients who have taken a paracetamol overdose are asymptomatic for the first 24 hours or just have nausea and vomiting
- Hepatic necrosis (elevated transaminases, right upper quadrant pain and jaundice) begins to develop after 24 hours and can progress to acute liver failure (ALF)
- Patients may also develop:
  - Encephalopathy
  - Oliguria
  - Hypoglycaemia
  - Renal failure – usually occurs around day three
  - Lactic acidosis

History

- Number of tablets, formulation, any concomitant tablets
- Time of overdose
- Suicide risk – was a note left?
- Any alcohol taken (acute alcohol ingestion will inhibit liver enzymes and may reduce the production of the toxin NAPQI, whereas chronic alcoholism may increase it)

Patients whose plasma-paracetamol concentrations are above the normal treatment line should be treated with acetylcysteine by intravenous infusion (or, if acetylcysteine cannot be used, with methionine by mouth, provided the overdose has been taken within 10-12 hours and the patient is not vomiting).

Patients on enzyme-inducing drugs (e.g. carbamazepine, phenobarbital, phenytoin, primidone, rifampicin and St John’s wort) or who are malnourished (e.g. in anorexia, in alcoholism, or those who are HIV positive) should be treated with acetylcysteine if their plasma-paracetamol concentration is above the high-risk treatment line.