



# Analgesics Toxicity

## Toxin

### Acetaminophen (paracetamol)

> 12 gm ingestion  
6-7 gm in an adult  
or 200 mg/kg in a  
child are the  
lowest threshold  
capable of toxicity.

## Clinical Picture

Phase 1 – 0-24 hours

Nausea, vomiting, nothing

Phase 2 – 24-72 hours

elevated liver enzymes, prolonged PT

Phase 3 – 72-96 hours

Hepatic necrosis, encephalopathy,  
coagulopathy, ATN

Phase 4 – 4 days- 2 weeks

If damage is not irreversible, complete  
resolution of hepatic dysfunction will  
occur

## Investigations

Acetaminophen level  
(Nomogram) after 4 hours,  
if not detected after 8  
hours, to predict  
hepatotoxicity.

-liver enzymes, Bilirubin  
PT / INR,  
Electrolytes,  
Urea & Creatinine

## Antidote

**N-Acetylcysteine** : Oral

Loading dose: 140mg/kg diluted in  
juice or soda.

Maintenance dose: 70 mg/kg every  
4 hours for 17 doses over 72 hours.

or

**Hidonac** (5gm / 25ml) 3 doses.

150 mg /kg in 200 ml glucose 5%  
IV slowly over 15 min by infusion,  
then 50mg /kg in 500 ml 5 %  
dextrose 4 hour, then 100 mg/kg in  
1 L. glucose 5% over 16 hour

## Additive Treatment

Stop vomiting as it may delay antidote  
administration.

Methionine protect the liver

(Orally, 2.5 g /4hours) max. 10 gm .

-Hepsan : (acetyl methionine)

TTT : according to time of ingestion.

If < 4 hr. Activated charcoal 1gm/kg,

If paracetamol serum level > 150 mg / kg

→ Start Acetylcysteine treatment or give  
Methionine.

(4-8hr) Start Acetylcysteine

>8hr : IV Acetylcysteine

### Salicylates

Toxic dose: 150-  
200 mg/kg causes  
mild  
manifestations,  
300-500mg/kg  
causes severe  
toxicity.

Wintergreen 5ml  
oil causes fatalities  
in children.

Vomiting, Hyperapnea, Tinnitus and  
lethargy.

Initially Hyper-ventilation  
respiratory alkalosis and then  
metabolic acidosis.

Seizures, hypoglycemia,  
hyperthermia, coma and death.

Chronic Salicylism:

- Delirium - Dementia

- Encephalopathy of unknown origin

- Congestive heart failure

Electrolytes  
Blood gases  
Chest Radiography  
Urea & Creatinine

**Multiple Dose Activated Charcoal  
(MDAC)**

Adult-child over 12 year 1gm / kg  
then ½ dose every 4 hr.

Child less 12 year 1gm / kg max  
50g.

After charcoal 2hr give Laxative  
Sorbitol or Lactulose.

**Sodium bicarbonate** I.V to  
prevent acidosis

Mild cases : High intake of oral fluids +  
activated charcoal.

Severe cases : Forced alkaline diuresis to  
reach urine PH more than 8.

-If Convulsions: Amp valium 10 gm

-Vit k Amp 10 mg IV to prevent hypo-  
prothrombin-emia

Urgent Hemodialyses