

Frequently Asked Questions (FAQs) from the Utah Poison Control Center

Acetaminophen

Acetaminophen alone or in combination with other drugs is one of the most common overdoses reported to the Utah Poison Control Center. Early recognition and treatment of an acetaminophen overdose can reduce the risk of liver toxicity. The Utah Poison Control Center is available to assist with treatment recommendations. Here are a few of our frequently asked questions:



1. Why should I obtain an acetaminophen concentration on every intentional overdose patient?
2. When is the best time to obtain an acetaminophen concentration?
3. What is the name of the antidote and how is it dosed?
4. How does the antidote affect my acetaminophen concentration?
5. When should I recheck labs once treatment has started?

1. Why should I obtain an acetaminophen concentration on every intentional overdose patient?

A: Serum acetaminophen concentrations should be obtained on all intentional overdose patients. Unfortunately, not all overdose patients are reliable historians. Because acetaminophen is easily accessible to those patients at risk of self-harm, we recommend drawing an acetaminophen concentration 4 hours after ingestion if the time of ingestion is known, or with the initial set of labs if time of ingestion is unknown. Obtaining this measurement can assist with assessing the risk of liver toxicity and deciding which patients need to be treated with the antidote.

B: A 4-hour acetaminophen concentration should also be drawn in unintentional

pediatric ingestions of >200 mg/kg or when the amount is unknown.

2. When is the best time to obtain an acetaminophen level?

A: If the time of ingestion is known, the acetaminophen concentration should be drawn 4 hours post-ingestion. Serum concentrations obtained prior to 4 hours post-ingestion are not useful in identifying patients that will need treatment.

B: If the time of ingestion is unknown, the initial acetaminophen concentration should be obtained with the patient's first set of labs.

3. What is the name of the antidote and how is it dosed?

A: Acetylcysteine (N-acetylcysteine, NAC) is the antidote for acetaminophen poisoning. It is given intravenously as 3 separate infusions lasting approximately 21 hours. IV NAC is most effective if started within 8 hours of ingestion. However, NAC may still provide benefit if administered later than 8 hours after ingestion.

B: The decision to treat with the antidote is based on the serum acetaminophen concentration and time since ingestion. In acute exposures when the time of ingestion is known, we use the

acetaminophen nomogram to identify patients at risk for high toxicity. The nomogram plots serum concentration versus time since exposure. Patients with serum concentrations above the solid line are at risk for toxicity and should be treated with the antidote acetylcysteine. The Utah Poison Control Center is available to assist in identifying patients that should be treated with NAC.

C: The total dosage for IV NAC in adult patients is 300 mg/kg, administered as in the following dosage schedule:

- 150 mg/kg in 200 mL D5W over 1 hour, then
- 50 mg/kg in 500 mL D5W over 4 hours, then
- 100 mg/kg in 1000 mL D5W over 16 hours

4. How does the antidote affect my acetaminophen concentration?

A: It is not acetaminophen that damages the liver but its metabolite NAPQI (N-acetyl-p-benzoquinone imine). The initial acetaminophen concentration helps us identify patients at risk for hepatotoxicity that might need treatment. All patients identified with a potential risk for hepatotoxicity based on the acetaminophen nomogram should be treated for the full NAC protocol (3 separate infusions totaling 21 hours of

therapy). A decline in acetaminophen concentration is not an indication to stop therapy.

5. When should I recheck labs once treatment has begun?

A: Once treatment with IV NAC has begun, acetaminophen concentration and liver enzymes should be obtained 2 hours prior to the completion of the third (16-hour) infusion of IV NAC. Concentrations obtained prior to that time are not necessary as they do not alter the initial course of therapy.

B: Treatment with NAC using the 21-hour protocol is sufficient in most patients. However, a small subset of patients may require additional therapy. The poison control center can assist you in identifying patients that require additional IV NAC therapy.

The Utah Poison Control Center is available 24 hours a day to answer any questions. Please call us at 1-800-222-1222.