

An update of N-acetylcysteine treatment for acute acetaminophen toxicity in children.

[Curr Opin Pediatr.](#) 2005 Apr;17(2):239-45

Marzullo L.

PURPOSE OF REVIEW: Acetaminophen poisoning accounts for a disproportionate percentage of all toxic ingestions, and can be life-threatening. This article reviews the mechanism and presentation of acetaminophen toxicity, as well as its treatment, including current thinking and treatment recommendations.

RECENT FINDINGS: N-acetylcysteine acts to detoxify acetaminophen in several ways, but primarily by increasing the synthesis and availability of glutathione, which binds and inactivates the highly reactive and hepatotoxic acetaminophen metabolite N-acetyl-p-benzoquinoneimine. The US Food and Drug Administration has approved an intravenous formulation of N-acetylcysteine, thus allowing the treatment time to be decreased from the 72 hr most commonly used for the oral regimen, to only 20 hr. This comes after many years of accepted intravenous N-acetylcysteine use in Europe and Canada, and much controversy as to the superiority of both treatments. This review summarizes this controversy, and offers a framework to develop a safe treatment plan that has the optimal outcome for the patient, as well as reflecting knowledge of the potential caveats at work. It describes side effects of N-acetylcysteine treatment, as well as relative indications to choose one route of treatment over the other.

SUMMARY: Acetaminophen can lead to irreversible liver damage and even death in acute overdose. Outcome is related to the swiftness in which the antidote (N-acetylcysteine) is provided. In the United States, there are now available both the oral and intravenous forms of N-acetylcysteine, and pros and cons exist for each. With brisk and adequate treatment using either route, recovery can be complete, and liver function can be restored.

