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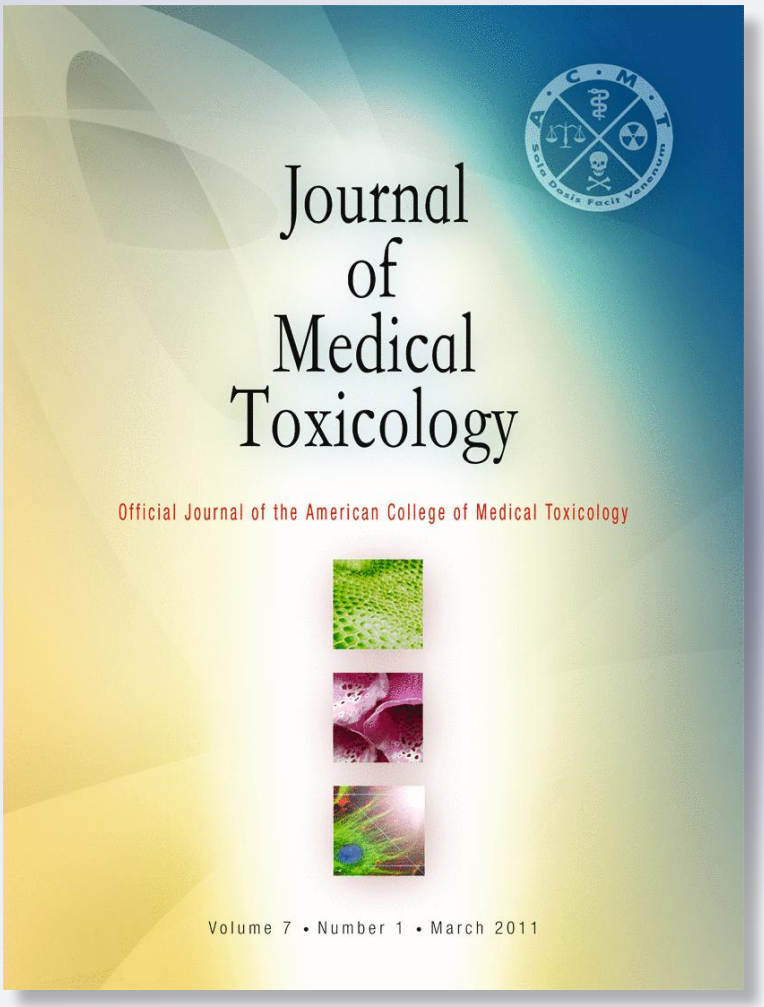

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THE POISON PEN

Why Not Formulate an Acetaminophen Tablet Containing *N*-Acetylcysteine to Prevent Poisoning?

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Letter to the Editor:

Acetaminophen (*N*-acetyl-*p*-aminophenol) or paracetamol is a widely used over-the-counter analgesic. Acetaminophen (AP) overdosage has caused acute liver failure in most countries. It was responsible for 50% of acute liver failure in the USA [1].

AP was the most common drug used in overdose, as it caused 48% of drug overdoses in Oxford. In the USA, the cost of treating patients with AP overdose was estimated at over $87 million every year [1].

L-Methionine and cysteamine [2] were first used as antidotes for treatment of AP poisoning, but their side effects (vomiting, flushing, and misery) led researchers to find alternative treatments.

Several decades of experience have proven that *N*-acetylcysteine (NAC) is the antidote of choice for AP poisoning. Very few adverse effects are known for NAC such as nausea and vomiting and unpleasant smell and taste in high doses [3]. However, in a large study, only 5% of the cases required intravenous NAC because they did not tolerate oral administration [4]

Despite worldwide use of high doses of NAC for the treatment of AP poisoning, there is no evidence of toxicity of NAC in human beings [3, 5, 6].It has also been reported that even long-term high-dose NAC ingestion is safe [7].

The golden time for administration of NAC as a protective antidote is the first 8 h after overdose. Thus, NAC should be given as soon as possible after AP overdose. It is therefore recommended to formulate a tablet containing AP and NAC.

There have been two preparations of AP and methionine which are sold out for some time. They were removed from the market. However, NAC is safer and more effective than methionine.

Since NAC should be administered for 20 h and longer, a sustain release preparation of NAC is ideal for combination with AP. This of course requires experimental works both in vitro pharmaceutical investigations and animal experiments before making formulation for human administration. The main target for this new formulation of AP and NAC should be populations at high risk such as psychiatric patients particularly those with depression and personality disorders who may attempt suicide by AP.

We hope that our proposal for this formulation will be considered by the medical toxicologists, health authorities, pharmaceutical scientists, and pharmaceutical industries to work on this recommended formulation.

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