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From: Ron Kirschner, MD, Medical Director
To: ALL HEALTH CARE PROFESSIONALS
Subject: Massive acetaminophen overdose
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- Patients with very large acetaminophen (APAP) ingestions represent a small proportion of overdoses but have a higher incidence of hepatotoxicity even if N-acetylcysteine (NAC) treatment is begun early.
- An observational study of 200 patients in Australia with massive acute APAP ingestion (defined as >40 g by history) found evidence in support of two effective treatment strategies: later than usual administration of activated charcoal and higher doses of IV NAC.
- Patients in this study had a median APAP concentration (obtained between 4 and 16 hours post-ingestion) 1.9 X the nomogram treatment threshold, which the authors refer to as the APAP ratio.
- There was a high incidence of altered kinetics with delayed APAP peaks or double peaks.
- Administration of activated charcoal within 4 h of ingestion was associated with a significant reduction in both the APAP ratio and the incidence of hepatotoxicity.
- Just over half of the patients with APAP concentrations > 2 X the nomogram threshold were treated with higher dose NAC (standard loading dose followed by 12.5 mg/kg/h for the full course). Treatment with the increased NAC dosing was associated with a lower rate of hepatotoxicity.
- Although this was an uncontrolled observational study, results suggest that there is a benefit to activated charcoal up to 4 hours after a massive APAP ingestion.
- For the subset of patients with APAP concentrations > 2 X the nomogram threshold, higher NAC infusion rates appear to further reduce the risk of hepatotoxicity, and are relatively benign.

Reference

Chiew AL. Massive paracetamol overdose: an observational study of the effect of activated charcoal and increased acetylcysteine dose (ATOM-2). *Clin Toxicol* 2017; 55: 1055-65.

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