

POSTER ABSTRACTS

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Does the Addition of Chocolate Milk Reduce the Adsorption Capacity of Orally Administered Activated Charcoal for GI Decontamination of Acetaminophen Ingestion?

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Background: Activated charcoal is commonly used as a gastrointestinal decontamination agent, however its color, taste and gritty texture make it difficult to administer orally. Increased palatability has been achieved by mixing it with flavoring agents such as chocolate milk. The purpose of our study is to determine if the addition of chocolate milk to activated charcoal significantly decreases the adsorptive capacity of the charcoal.

Methods: Healthy volunteers, ages 18 years and older, were recruited and consented. Participants were randomized to one of three interventions: 1) activated charcoal alone; 2) activated charcoal/chocolate milk in a 3:1 ratio; or 3) activated charcoal/chocolate milk in a 1:1 ratio. Baseline acetaminophen levels were drawn and acetaminophen was administered in a one-time dose of 50 mg/kg (max 4 grams). Thirty minutes later, patients drank activated charcoal (+/- chocolate milk) administered in an 8:1 ratio (charcoal:drug). Serum acetaminophen levels were subsequently drawn at 120, 180 and 240 minutes. Comparison of serum acetaminophen levels between groups was performed using one-way ANOVA and repeated measures analysis. A sample size of 30 patients per group would provide a power of 0.84 to detect a 20% difference in acetaminophen levels between groups, at a significance level of 0.05.

Results: Eighty-nine of 90 participants completed the study. There were no significant differences among the three groups for age, weight, gender and amounts of acetaminophen and charcoal ingested. Comparisons of serum acetaminophen levels between groups at 120, 180 and 240 minutes demonstrated no statistically significant reduction in the adsorptive capacity of the activated charcoal mixed with chocolate milk as compared to activated charcoal alone.

Conclusion: Addition of chocolate milk as a flavoring agent to orally administered activated charcoal did not significantly decrease the adsorptive capacity of the charcoal for acetaminophen.