Five Common Toxins and Activated Charcoal

I have a question for the author about his research for the November 2008 Pharm Profile article, “Activated Charcoal.” The article states that charcoal is contraindicated for metaldehyde ingestion. Yet it is widely accepted that it is proper protocol to give activated charcoal in these cases. In fact, in the article “Five Common Toxins Ingested by Dogs and Cats” in the same issue, charcoal is recommended as an antidote to help eliminate metaldehyde. I am curious about the discrepancy. Also, I was wondering if there is any research on UAA gel, which is mentioned in the Pharm Profile article.

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I have just finished reading the November 2008 journal and am puzzled by the contradiction between the paper by Drs. Luiz and Heseltine and that by Dr. El Babri in reference to the effectiveness of activated charcoal in the treatment of ethylene glycol and metaldehyde poisonings. The former says to use it; the latter says it’s ineffective. Is there an explanation as to the correct information?

Philip T. Durfee, DVM, MPH, MVSc

The Authors’ Replies

The administration of activated charcoal in the treatment of metaldehyde intoxication is controversial. Several references I consulted do not either include or recommend the administration of activated charcoal in the treatment of metaldehyde intoxication. The Handbook of Poisoning in Dogs and Cats, which is considered a veterinary toxicology reference, states, “Metaldehyde reportedly does not bind to activated charcoal and therefore use of adsorbents is not indicated.” On the other hand, activated charcoal has been shown to help inhibit metaldehyde absorption in rats.

Universal Animal Antidote (UAA) gel (Vedco, Inc. St. Joseph, Missouri) contains activated hardwood charcoal and thermally activated attapulgite clay in an aqueous gel suspension. The recommended oral dosage is 1 to 3 mL/kg in dogs, cats, and large animals. The manufacturer states that the product should be shaken well before use and protected from freezing.

Lotfi El Babri, DVM, MSc, PhD

References

I double-checked our sources about the use of activated charcoal in ethylene glycol and metaldehyde toxicoses. For ethylene glycol, we wrote, "Early diagnosis and treatment are critical for a successful outcome. Emetics should be administered if no signs are observed and the exposure occurred less than 4 hours previously. Activated charcoal and a saline cathartic may be given, although [ethylene glycol] is not significantly adsorbed by charcoal." I verified this information with the sources cited in the article. I also gathered information from the sixth edition of Ettinger’s Textbook of Veterinary Internal Medicine, which states to administer activated charcoal for recent exposure (≤2 hr). The recommendation we stated is conditional on the duration of exposure.

For metaldehyde, we wrote, “If the patient presents acutely, is alert, and does not have excessive muscle tremors or seizures, an emetic should be given, followed by activated charcoal and a cathartic.” Again, I verified this statement with the sources cited in the article as well as The 5-Minute Veterinary Consult by Tilley, which recommends emetics or gastric lavage followed by administration of activated charcoal to prevent further absorption in animals with no clinical signs.

Julie Ann Luiz, DVM

References
1. Ossweiler GD. Common household products. In: Niegoski EA, ed. The National Veterinary Medical Series: CONTINUES ON PAGE 114
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Editor’s note: Thank you to the attentive readers who pointed out the difference between these articles and to the authors for their clarification. As in many aspects of veterinary medicine, different recommendations exist based on clinical experience and patient presentation versus laboratory chemistry, and different references reflect these variations. Awareness of both laboratory and clinical data is useful when determining the most appropriate treatment for an individual patient.