

Activated Charcoal with Sorbitol or Without?

This study compared the efficacy of single-dose activated charcoal, single-dose activated charcoal with sorbitol, and multidose-activated charcoal in reducing plasma carprofen concentrations following experimental overdose in dogs.

In this randomized 4-period crossover study, 8 healthy beagles received a 120-mg/kg dose of carprofen followed by either a single dose of activated charcoal (2 g/kg) an hour later, a single dose of activated charcoal (2 g/kg) with sorbitol (3.84 g/kg) 1 hour later, multiple doses of activated charcoal (2 g/kg) after 1 hour and every 6 hours for a total

of 4 doses, or no treatment (control). Current veterinary recommendations include using multiple doses of activated charcoal with drugs that undergo enterohepatic circulation, including carprofen; however, this practice is associated with increased stress, risk for aspiration, and increased time and cost. Cathartics such as sorbitol cause delayed GI transit time and toxin absorption but can also cause abdominal cramps, vomiting, dehydration, nausea, electrolyte imbalances, and hypotension.

A single charcoal dose was found to be as effective as multiple doses in reducing the area under the curve and maximum plasma concentration. Multiple activated charcoal doses significantly reduced elimination half-life as compared with activated charcoal with sorbitol and the control groups. Significantly more GI side effects were seen in the multiple-dose group than in the others. Although further prospective studies may help determine efficacy in

the clinical setting, this study suggested that single-dose activated charcoal is as effective as activated charcoal with sorbitol or as multidose-activated charcoal in reducing serum carprofen concentrations after overdose.

Commentary

Activated charcoal is commonly used to treat toxicant ingestion in dogs, but which bottle should be used—the one with sorbitol or the one without? Is it necessary to redose—and how many times? It is nice to learn that, at least for carprofen ingestion, dosing once is adequate and the bottle to use is the one without sorbitol. For smart dogs that will not actually eat the activated charcoal, this will save a lot of stress on not only them but also team members trying to administer it.—April Paul, DVM, DACVECC

Source

Koenigshof AM, Beal MW, Poppenga RH, Jutkowitz LA. Effect of sorbitol, single, and multidose activated charcoal administration on carprofen absorption following experimental overdose in dogs. *J Vet Emerg Crit Care (San Antonio)*. 2015;25(5):606-610.

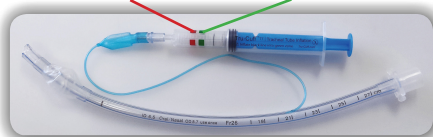
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