



Another Sequela to Xylitol Ingestion in Dogs

Xylitol, a sugar alcohol recently introduced to the United States, is used as a sweetener in many sugar-free products for humans, including baked goods, gum, and toothpaste. Although humans have little or no increase in insulin secretion or blood glucose concentration after ingesting products containing xylitol, dogs have a severe, rapid increase in blood insulin. This can lead to clinical signs of hypoglycemia within 30 to 60 minutes after ingestion. This report is the first documentation of development of hepatic failure after xylitol ingestion. Eight dogs were seen with primary clinical signs of lethargy and vomiting after ingesting xylitol-containing products. Other signs included moderately to severely elevated liver enzymes, hyperbilirubinemia, hypoglycemia, hyperphosphatemia, prolonged clotting times, and thrombocytopenia. Xylitol doses in the dogs ranged from 1.4 g/kg to 16 g/kg. Despite aggressive treatment, including dextrose administration, IV fluids, and plasma transfusions, 5 of the dogs died or were euthanized. Two of the dogs made complete recoveries, and 1 dog was lost to follow-up. Survival did not appear to correlate with xylitol dosage. Of the 3 necropsies performed, 2 found severe hepatic necrosis and 1 severe hepatocyte loss or atrophy with lobular collapse. The authors recommend aggressive treatment for any dog that has ingested more than 0.1 g/kg of xylitol, even if clinical signs have not developed. Treatment delay may increase risk for fatal hepatic necrosis. Liver enzyme values, total bilirubin concentration, platelet counts, and coagulation variables should be monitored for at least 48 to 72 hours after ingestion. Administration of hepatic protectants might be beneficial as well, especially if given early.

COMMENTARY: The number of canine xylitol exposures reported to the Animal Poison Control Center has increased from 3 in 2002 to 138 in just the first half of 2006. It was previously believed that clinical signs were seen shortly after ingestion (within 30 to 60 minutes). However, 6 dogs in this report did not develop signs until 9 to 72 hours after xylitol ingestion, and these signs were associated with acute hepatic failure, not hypoglycemia. Interestingly, in the cases reported here, the actual amount of xylitol ingested compared with the dog's size was not a predictor of outcome. This emphasizes the importance of educating clients on the dangers of xylitol toxicity so that any suspected ingestions can be reported early and treated quickly and aggressively.—*Patricia Thomblison, DVM, MS*

Acute hepatic failure and coagulopathy associated with xylitol ingestion in eight dogs. Dunayer EK, Gwaltney-Brant SM. *JAVMA* 229:1113-1117, 2006.