LAMORINDA WEEKLY
Independent, locally owned and operated!
www.lamorindaweekly.com 925-377-0977

Published March 3rd, 2010

Xylitol Toxicity

By Mona S. Miller, DVM

Dr. Mona S. Miller lives in Lafayette with her 4 year old son, yellow Labrador Retriever and grey cat. She has worked at Four Seasons Animal Hospital in Lafayette since moving here in 2001. She attended Cal as an undergrad, and received her DVM from U. C. Davis. She can be reached at Four Seasons, 938-7700, or by email to MonaSDVM@aol.com.

Recently a friend's dog became suddenly sick and I was reminded about the many differences between humans and our furry friends in how substances are processed, or metabolized, leading to different results in the body. In veterinary school I was taught that "cats are not small dogs" nor are "dogs four-footed humans." A great example of this is xylitol toxicity in dogs. Xylitol is a common sugar substitute sweetener, used in gums and candy, and can be purchased in granulated form for baking. It has become popular for human diabetics and for people on low-carbohydrate diets. It has significant anti-cavity properties and so has found its way into many oral hygiene/dental products as well. There are some thoughts that xylitol may even have beneficial effects in women's health. In humans, xylitol is absorbed slowly and does not affect blood insulin or glucose levels to any extent.

In contrast to humans, xylitol is absorbed very quickly in dogs and can promote insulin release from the pancreas, thus causing a significant low blood sugar level (hypoglycemia). This effect can be seen within 30-60 minutes of ingestion. It takes a small amount of xylitol to cause problems with blood sugar - the equivalent of 1-2 sticks of gum for a 10lb dog. Signs of a sudden drop in blood glucose are weakness, dizziness, acting disoriented, stumbling and falling, and even seizures.

At somewhat higher doses (about 5 times the amount to cause low blood sugar), xylitol can cause severe liver failure and bleeding. This effect is delayed up to 72 hours after ingestion, although signs can be seen as early as 8 hours. Symptoms of sudden liver disease can be weakness, not eating, vomiting, lethargy, fluid build-up in joints or abdomen or difficulty breathing (from bleeding). Bleeding can occur secondary to the liver failure - one of the jobs of the liver is to produce proteins called clotting factors that are important in the "clotting cascade" - the sequence of events and reactions that occur when injury occurs and a clot is necessary to stop the bleeding. When clotting factor production is faulty, spontaneous bleeding can occur without a trigger event (think of how careful a hemophiliac person has to be to avoid injury). The clotting cascade can be measured with blood tests.

Treatment for either of these syndromes (the hypoglycemia or the liver failure) needs to be immediate and intensive. Often, these dogs need intravenous fluids and injectable medications for 24-72 hours, with continued monitoring of their blood glucose, liver enzymes and clotting factors. Most dogs do well, and without long-term complications, if they receive thorough and intensive veterinary care in a timely manner. Unfortunately, some dogs do not survive, and it appears that the degree of illness or the risk of death may NOT be dose-dependent; that is, even a large dog that eats only 1 stick of chewing gum may be at high risk for severe illness or even death. Other problems can cause similar signs, so it is important for your veterinarian to know if you use xylitol for baking, mouth rinses or gum/candy.

Reach the reporter at: info@lamorindaweekly.com