



Central Ontario
VETERINARY SERVICES

132 Commerce Park Drive, Unit N, Barrie ON L4N 8W8, (705) 722-3232, info@centralontariovet.com

AN UPDATE ON CALCIUM

If you have dairy cows you have likely treated countless cases of Milk Fever. The treatment for Milk Fever has not changed very much over the years; however, there have been several new advancements and understandings of the disease that have somewhat changed the face of its treatment. Between subcutaneous versus intravenous treatments, and oral boluses versus pastes, we hope to get all of our dairy producers up-to-date with the latest information and recommended treatment protocols.

Milk Fever, or hypocalcemia, generally affects older cows at or around calving whereby the cow has low blood calcium due to colostrum production and the inability to replace the calcium in blood quickly enough. Colostrum contains substantially more calcium than milk, which is why we tend to see Milk Fever around calving more frequently than later in lactation. Since cows tend to produce more milk (and more calcium) with each lactation, this is also why we tend to see more cases of Milk Fever with older cows. Overall, between 2-6% of second lactation or greater dairy cows will develop clinical Milk Fever. These are the cows that will require immediate calcium treatment, as they tend to be down or wobbly. In addition, greater than 50% of second lactation or greater cows will develop subclinical Milk Fever.

These subclinical cows may not be down with Milk Fever but are at risk of developing other fresh cow diseases like retained placenta, metritis, ketosis, and mastitis, to name a few.

Cows with low blood calcium also typically have low blood phosphorous, high blood magnesium, high blood glucose, and normal to slightly low blood potassium. New research into these associated blood mineral levels have somewhat changed how we treat Milk Fever cows.

Often, we have recommended treating with an IV calcium solution that also contains, phosphorous, magnesium, and dextrose. These combination solutions unfortunately have a type of phosphorous that is not bioavailable to the cow's body, so she cannot utilize it. Also, as mentioned above, a Milk Fever cow has high magnesium and glucose, so giving a solution with these added components is unnecessary and can prolong hypocalcemia if the calcium levels are not sufficiently corrected. These combination solutions are often more expensive than solutions with just calcium and their use is irrational. Administration of a bioavailable source of phosphorous, such as a Fleet Enema, intravenously may have some benefit.

The recommended treatment for down cows with Milk Fever is an IV solution with just calcium, followed by an oral calcium bolus. Additionally, getting the cow up with encouragement, hip lifters, or the like is of great importance, as up to 20% of down, alert cows never get up. Boluses are recommended over subcutaneous calcium as peak blood calcium levels are reached after only 30 minutes. The boluses last up to 12 hours with continuous release of calcium, and there is no risk of abscess formation or tissue reaction that can be seen with subcutaneous calcium administration. Boluses are also recommended over calcium pastes due to easier administration and less risk of aspiration, which has been associated with pastes. Many Milk Fever cows have a relapse of low blood calcium within 12 hours of treatment, so a second oral calcium bolus given within 12 hours of the first treatment can prevent this.

Oral calcium boluses have also been proven to successfully treat the 50% of second lactation or greater cows that suffer from subclinical Milk Fever. Targeted calcium bolus treatment to at-risk cows at calving can help prevent clinical Milk Fever cases. "At-risk" cows include those that have had Milk Fever previously, heavy-milkers, and older cows. Recommended treatment protocol for these cows is an oral calcium bolus at the first signs of calving, with repeated bolus administration every 12 hours for up to 4 boluses.

The veterinary team at Central Ontario Veterinary Services is dedicated to assisting our producers in preventing and treating cases of Milk Fever. We are also happy to answer any questions or concerns on the topic.