

## Post-Calving Uterine Infections

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Following calving, the uterus of over 90% of all dairy cows becomes contaminated with bacteria. Some of these bacteria are harmful and others are not. When harmful bacteria are present, the uterus may become infected. If these infections cause only mild changes in the superficial layers of uterus, it is termed endometritis. However, in some instances, severe infections that involve all the tissue layers of the uterus develop and this condition is called metritis. Metritis often involves the accumulation of fluid within the uterus and suppression of the estrous cycle. While few animals die from uterine infections, there is often a negative effect on fertility, milk production and overall health of the cow.

Uterine infections occur after calving because of decreased immune function that occurs around calving and because the uterus is no longer protected from contamination from the external environment by the closed cervix, cervical mucous plug, and vulva. During the birthing process, these protective barriers are compromised and bacterial contamination of the uterus occurs. Other conditions such as retained placenta, difficult calving, twins, milk fever and overly fat cows may increase the risk of metritis. Unsanitary conditions in the calving pens, contaminated calving equipment, hand or arms and trauma to the birth canal from assisted calving also increase risk. Fortunately, most of this contamination is transient and is resolved by 4 weeks after calving.

The clinical signs of uterine infections vary with the severity of the infection. With endometritis, there may be few if any noticeable signs of infection. With metritis, there is often a stinky, blood-colored, watery discharge that develops during the first 2-3 weeks after calving. Often, during the first 14 days after calving, there may be an appreciable amount of brown-red or even white discharge called lochia. Metritis discharges must be distinguished from normal lochia. Lochia is the result of a normal healing process and unlike metritis, it will not have an offensive odor. On palpation, the wall of a normally involuting uterus will feel thickened and contain numerous folds during the first week after calving and by 2-3 weeks, the entire uterus may be palpated per rectum. However, in cows with metritis, the uterus will lack tone, may feel thin walled, and cannot be completely palpated. In more severe cases of metritis where toxins have been absorbed from the infected uterus, other signs such as high fever (>103.5 F), depression, lack of appetite and lameness due to laminitis may be seen.

There is lots of controversy about appropriate treatment regimes for post calving uterine infections. Some of the controversy is due to lack of definition for what type of infection is present. There is general agreement that aggressive treatment is only needed in the more severe cases where the whole cow is sick. Under these conditions, fluid therapy to

combat shock and dehydration; anti-inflammatory drugs to reduce pain and encourage eating; and broad spectrum antibiotics may be necessary.

While it is common practice on some dairies, intrauterine antibiotic therapy by bolus or infusion is not currently approved. To use this type of therapy, it is necessary to have veterinary involvement as it is extra-label. Furthermore, there is little scientific evidence to support this type of therapy.

The use of hormones is also debatable. Estrogens, which have been available for many years, are of questionable benefit for most cows but may have value in certain cases. Recent research by Dr. Overton suggests that routine use of ECP (4 mg) given at 24-36 hours after calving to all cows with RP, difficult calvings, twins, or stillbirths was not beneficial in reducing the number of cases of metritis. There was a tendency, however, for estrogens to prevent the more severe cases of metritis in some older cows. The use of oxytocin has shown beneficial results in some studies when 20 USP (1 ml) is given for 2-3 days after calving. Slightly higher doses were needed if anti-inflammatory drugs were also being used. Prostaglandins will help to empty the fluid filled uterus in cases of endometritis or pyometra discovered after about 3 weeks in milk.

While there is disagreement concerning treatment of uterine infections, there is strong agreement about control and prevention of these infections. The number of uterine infections can be reduced by controlling the occurrence of milk fever, ketosis and retained placenta. Each of these conditions has a nutritional predisposition associated with dry cow and transitional cow feeding practices. Providing a clean, dry calving pen that is free of manure buildup is also important. Sufficient pens should be available to allow appropriate pen maintenance between calvings. Using scrupulously cleaned calving equipment, arms and hands will prevent many of these infections.

Many dairies are now on aggressive programs to allow early detections of uterine infections that may require treatment. Most of these involve taking daily rectal temperatures of fresh cows. Cows found to have temperatures of greater than 103-103.5F should be examined closely for indications of uterine infections. Often these cows with high temperatures will benefit greatly from antibiotic therapy given intramuscularly or intravenously. Dr. Overton's work also suggested that during the summer months, cows are more likely to develop the more severe forms of metritis and therefore, more careful attention to monitoring and treatment is needed during this time.

The key to reducing the detrimental effects of uterine infections on milk production and fertility is prevention of uterine infections by giving attention to the calving pen environment and dry cow nutrition along with to early identification of uterine infections requiring therapy. Overly aggressive therapy on minimally infected cows with uterine infusions and hormones may be detrimental to subsequent fertility and perhaps cause a residue in your bulk tank milk. Where doubt exists, consult your veterinarian.