Texas Dairy Matters

Higher Education Supporting the Industry

COMPARE METRITIS TREATMENTS

Ellen Jordan, Ph.D.
Extension Dairy Specialist
Department of Animal Science
Texas A&M AgriLife Extension Service
The Texas A&M University System

Uterine infections commonly occur during the early postpartum period. The incidence of infection varies from 3 to 36%, depending upon the herd. Frequently, minor uterine infections clear up without any treatment from the dairy producer or veterinarian, but when the cow's defense mechanism fails, a toxic infection, toxic puerperal metritis, sometimes results.

Symptoms include fever, depressed appetite, decreased milk yield and a foul-smelling uterine discharge. These symptoms are life threatening and require prompt veterinary intervention. Various antibiotics have been used individually, and in combination, to treat toxic puerperal metritis. When antibiotics are administered, a residue may appear in the milk, forcing milk to be discarded to ensure food safety.

This is particularly true when a drug is used in an off-label manner. Any treatment must be prescribed in careful consultation with your veterinarian. In addition to milk withdrawal times, meat withdrawal times must be adhered to prior to culling. The milk and meat withdrawal times usually increase when drugs are given in an off-label manner. Deciding which treatment to use requires weighing the benefit and cost.

University of Florida researchers and a USDA-ARS researcher from College Station,

TX compared three different treatments for toxic puerperal metritis. Treatment 1 received a high dose of penicillin G. Treatment 2 received an intrauterine infusion of oxytetracycline on days one, three and five, in addition to the five daily doses of penicillin G in treatment 1. The third group received the prescription drug ceftiofur sodium at the FDA- approved dose.

The treatments were all off-label treatments, either due to dose, route or treatment of a disease not on the label. Therefore, all require a valid veterinary-client-patient relationship to be prescribed. Treatments are being used to illustrate the economics of different treatment options. Explore these options with your veterinarian and then follow his written prescription for dosage and withdrawal times.

In this trial, cows responded similarly to each treatment when evaluated on milk production, rectal temperatures and serum haptoglobin levels (a blood constituent produced in response to an inflammatory condition). Milk weights were recorded for the morning milking only. By day 12, the milk production response among the three different treatments was nearly identical. Thus, the decision on which drug or combination of drugs should be used depends upon veterinary preference, cost and potential lost income from milk discard.

To decide which treatment would be preferable from a cost basis only, look at the cost for the drug, labor for the injections, cost of individual needles and syringes, labor and supplies for infusion, milk discard times and cost of supplies and labor for antibiotic screening. In the table, these costs are estimated based on local prices and data from the Food Animal Residue Avoidance Database.

Treatment 2 may require two different screening tests increasing your cost. Most producers in Texas are using a test which only screens for beta lactams (which includes penicillin but not oxytetracycline). Milk discard times are estimates and should be determined by your veterinarian's analysis of antibiotic screening results.

When determining which treatment is most cost effective, examine not just the cost of the original treatment, but the consequences of those treatments. Re-evaluate what you are doing as the price of drugs, labor and milk change. Also, the value of the discarded milk may change if you use it to feed to calves or find discard times differ in your herd.

The final item that needs to be valued is *Peace of Mind*. Only you can assess the value of no withdrawal. Milk from a treated cow contaminating a tanker load of milk is a serious risk.

Table: Comparison of potential costs of various treatments for toxic puerperal metritis.

Item	Treatment 1 Penicillin	Treatment 2 Penicillin and Oxytetracycline	Treatment 3 Ceftiofur
Drug Cost[1]	$10.35	$ 16.49	$63.00
Labor[2] for Injection	$ 2.50	$ 2.50	$ 2.50
Labor and Supplies for Infusion[3]	None	$ 4.35	None
Milk Discard at $16/cwt [4]	$56.00	$ 56.00	None
Ab Screening Tests[5]	$ 8.10	$ 21.60	None
Total	$76.95	$100.94	$65.50
Total @$12/cwt[6]	$62.95	$84.94	$65.50
PEACE OF MIND	$??	$??	$??

[1]Includes drug plus $ .25 for a syringe and $ .10 for a needle for each cow each day.
[2]Charge of $ .50 per cow per day.
[3]Labor was calculated at $1.00 per day, syringe $ .25, glove $ .10, and infusion tube $ .10.
[4]Based on a milk price of $16.00/cwt., minimum 7 days of discarded milk, and 50 pounds of milk discarded per cow per day. Discard times and amounts will vary depending upon when treatment begins after calving. Use your veterinarian's prescribed time to initiate testing.
[5]Based on daily tests starting the last day of recommended discard. Milk tested and put in tank after two negative tests. Used three-tests on average. A commonly-used test for beta lactams which includes penicillin runs $2.10 per test and for tetracyclines the test costs approximately $4.50. This is assuming the producer already has all necessary equipment. Labor charge of $ .50 per test and $ .10 per sample vial.
[6]Total if milk price of $12.00/cwt instead of $16.00/cwt.