

Hormonal Management Of The Postpartum Cow

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In 1979 I did a field trial for Syntex on a new product they were introducing on the market called Fenprostalin for the treatment and management of retained fetal membranes.

This was really my first exposure to the use of prostaglandins with a longer half life in cows. In essence, what we did in this particular trial was to give a dose of Fenprostalin within 12 hours to fresh cows with retained fetal membranes.

We treated half the cows in the trial with the product and the dairyman treated the rest of the cows with the procedures we had always used. At that time we removed what we could of the placenta and infused the uterus with various products, primarily antibiotics.

The trial was evaluated with only one criterion and that was the "days to pregnancy". We learned that the cows treated with Fenprostalin were pregnant on an average of 28 days earlier than the cattle that were managed the traditional way.

This trial triggered my interest in the use of prostaglandins in the management of postpartum dairy cows. I was also involved in two trials using GNRH products.

I developed a real appreciation for what hormonal management of the uterus in a postpartum cow could do compared to things we had traditionally done like infusing cows.

In some situations we gave Estradiol or ECP or some of the other natural hormones like luteinizing hormones and Chorionic Gonadotropin because they were the only hormones that were readily available to us at that time. Natural hormones with high molecular weight often became ineffective because of the development of antibodies and antihormones.

As a result of these trials and the use of Prostin in the mare I concentrated on the use of hormonal management of the postpartum cow and its aid in the reduction of the problems we had seen and I began to apply the things I had learned.

When we first started in the early '80s, the hormonal approach to managing the postpartum dairy cow was not generally accepted and at times we were severely criticized by some of our contemporaries and by

some of the people in a regulatory capacity. But time exonerated us and as you know the use of prostaglandins and GNRH compounds are generally accepted in the management of the postpartum cow today.

If you have visited us in South Florida you know it is one of the most stressful areas in the United States to dairy. In the summertime our relative humidity runs 85% to 100% with temperatures ranging from the high '80s into the mid '90s on a daily basis and consequently it creates a great deal of heat stress on dairy cows.

In an ideal situation with a perfectly balanced ration, high quality forage and on target dry matter intake what I am discussing might be totally unnecessary. There have been a lot of advantages doing what we have done and I would like to show you some slides to demonstrate what we are dealing with, then briefly go through the program I designed over the years for my clients.

The size and nature of the dairies in South Florida have changed veterinary service as we used to know it. Frankly the concept that it is necessary for a veterinarian to personally palpate every cow is still not generally accepted there.

There are laymen in my practice who can in fact do postpartum evaluations, rectal palpations and evaluate follicular structures in the uterus as well as many veterinarians. Of course veterinarians must still do this in the smaller herds where there isn't the skill to evaluate cows.

Our goal was to design a system to both improve the performance of the cow and to create a situation where I could personally do a postpartum evaluation sometime during the lactation, but eliminate a large portion of routine palpations because of the size of our herds and the management's lack of willingness to pay for the additional time.

Our program is really quite straightforward. We had developed a real appreciation for Fenprostalin, but as you know it is not on the market now. For years, we ran our program with 2cc of Fenprostalin within 12 hours of freshening if at all possible, but because it is very difficult to ascertain what portion of the fetal membranes were retained, we injected every cow.

We have a program designed where the cattle are worked on Monday, Wednesday and Friday or Tuesday, Thursday and Saturday. We try not to have any routine work done on our dairies on Saturday and Sunday in Florida because we are usually shorthanded since most of the management people rotate taking Saturday or Sunday off.

The injections are given at 14 day intervals, but we may vary that one day either way and give the shots at 12 to 15 day intervals depending on the printout from the computer. I would have preferred to use 11 day intervals, but couldn't get it implemented because of the irregular schedule would fall on weekends. Fortunately, 2 week intervals would work.

On day 14, postpartum, we give an injection of GNRH and in general we use either one of the two products now available on the market depending on price. On day 28 we give Lutalyse and on day 42 a second injection of Lutalyse.

We breed any cow that comes in heat off the 42 day injection, then we start rectal palpation and evaluation of cows that do not come in heat by 50 days. This significantly reduces the number of postpartum cows that arrive at 42 to 50 days not cycling and with subclinical infections.

What we do is take control of a cow's cycle and by the nature of this program we can cause the cow to cycle more frequently than she would under natural conditions and also get a higher progesterone surge with the advent of each cycle.

High producing cows go into a negative energy balance and consequently produce an ovum that will not conceive so we have an opportunity to breed these cattle off a follicle where the ovum was generated prior to freshening. Most of our cows are exposed by 75 days and consequently don't show up on our 75 day check list.

We started evaluating cows at 50 days postpartum and worked every two weeks until we had a breeding, however we were left with a small portion of the herd that was not cycling and did not have a breeding.

Ultrasound examination of the 50 day postpartum cows that had not cycled in August when we were in maximum heat stress revealed 90% of the cows had developed a cystic condition and they were treated as such. In December, when we evaluated the same cows we found 90% of them that were deemed to be non-cyclic were in fact cycling and they were just missed because of inadequate heat detection.

The difference between the two periods of time was obviously related to intake. The ultrasound exams of these cows made me realize that I had been focusing much too long on the back end of a cow and should have been spending more time focusing on ways to get her to eat more.

As a result, we have spent a great deal of time re-focusing our postpartum health care. We concentrate on the things that might help a cow keep her intake up rather than treating the performance of the reproductive tract. This program, in its original inception, was successful and we were able to reduce our reproductive culls to 10% per year and made a dramatic difference in the performance of our herds.

We evaluate pregnancies in cows that occur over and under 120 days and try to keep the cows pregnant under 120 days at 60% to 70%. In the winter and spring, these goals were easily attained. There have been times when we backed away from this program and our numbers went from 60% and 70% pregnant under the 120 days down to 40% under 120 days. Now I would certainly question the validity of ever changing our program.

Recent work by Dr. Thatcher and his staff at the University of Florida and published in several farm journals suggests giving an injection of GNRH followed by a dose of prostaglandin in 7 days then repeating the GNRH 24 hours later. The cows are bred either by appointment or on standing heat.

We now use that system in cows with 3 services or more with good results. According to Dr. Thatcher's studies, we are doing a better job of harvesting a good ovum by hitting the appropriate follicular wave.

With the exception of one or two isolated cases I have not infused a cow in the last 10 years with any antibiotics or irritants such as Povidone, Iodine or Propylene Glycol. I have also spent a considerable amount of time trying to convince my clients that there is very little value in infusion.

I think research supports the fact that GNRH and prostaglandin management of the postpartum cow have been superior to anything we have ever tried before or since.

In conclusion I believe that rectal palpation of the postpartum cow prior to 21 days is of little value and I am convinced infusing the postpartum cow is not the right approach to good management. I believe in the proper evaluation of the total cow and making an effort to keep her intake up.

Managing a cow's reproductive cycle with GNRH and prostaglandin has been a useful tool in the management of the postpartum cow.

Fresh Cow - Repro Program

Immediately after freshening

1. 50 grams of oral calcium
2. 2cc Bovilene or Estrumate subcutaneous

3. 5cc Oxytocin IV in the parlor and milk immediately

Be sure cow is eating and appears normal:

Check temperature on Day 1 and Day 7

If cow is off feed with no temperature give:

- a. 8 oz propylene glycol, twice daily for 2 days
- b. Give Yea Sacc or Diamond V Yeast
- c. Pump with water and electrolyte to keep hydrated
- d. Check for DA
- e. Offer free choice alfalfa to maintain rumen mat and function

DAY 14

- a. 2cc Factril or Cystorellin, subcutaneous.

DAY 28

- a. 5cc Lutalyse, IM

DAY 42

- a. 5cc Lutalyse, IM

DAY 45

- a. Breed on any heat within 5 days on 1st heat after voluntary wait period.

Cow with temperatures

Cow with elevated temperature 103 degrees or above
Heifer with elevated temperature. 102.5 degrees or above

If cow has a temperature do all of the above PLUS:

- a. Naxcel, 1cc per 100 lbs of body weight
- b. Banamine 1cc per 100 lbs of body weight until 1 day after temperature subsides.

If there is no response put the cow on Procaine Penicillin or Polyflex and put her in the pot herd. Treat until the temperature is normal.

Abstract

The incidence of bovine spongiform encephalopathy in the progeny of affected sires and dams

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Case control study techniques were used to compare the incidence of bovine spongiform encephalopathy (BSE) in the progeny of two affected sires and 110 affected dams with the incidence of BSE in the progeny of animals known to be unaffected at the last record. All the progeny were born before the ban on ruminant-derived protein in feedstuffs issued in July 1988. The results provide little, if any, evidence of differences between the incidence in the progeny of the affected animals and the incidence in the progeny of the presumed unaffected animals. Data from five herds

were used in a logistic regression analysis to study the effects of the disease status of the dam and the age of the dam at the birth of the calf on the incidence of BSE. The disease status of the dam did not significantly affect the disease status of its progeny, after allowance had been made for the effects of herd, year and the age at last record of the progeny. The difficulty of establishing maternal transmission if a high proportion of the dams are incubating the disease and transmission can occur early in the incubation period is discussed.