

# Panel Discussion

Dr. Riley Shuler  
Dr. C. J. Bierschwal  
Dr. Jack Britt

**Question**—Dr. Jenks Britt. I would like to ask my brother if he thinks these two drugs will be available economically for us to use in the future?

**Answer**—If I worked for the FDA I could answer the second part of that question quickly. Will it be available in the future? It is my understanding that procedures which have to be followed for approval of new drugs are progressing quite well. I don't have any authority to give you any type of timetable. In recent discussions with the people from Abbott Laboratories and Upjohn Co., I found they are optimistic that both gonadotropin-releasing hormone and prostaglandin F<sub>2</sub> alpha will be available for use in this country in the near future. Prostaglandin F<sub>2</sub> alpha has been approved for use in horses in this country, and should be available within the next six months or so. The Upjohn Co. hopes that the product will be available for cattle sometime in the future, with a timetable of something like two years or less. I might add that it is the apparent policy of these companies to have a product that can be economically marketed, and this is my understanding of how prostaglandin and GNRH would be handled. You would have to talk to someone from the companies to get verification of that statement.

**Question**—Dr. Jim Turboc, Deckerville Michigan. Do you have any problems with multiple ovulations or multiple pregnancies with prostaglandin?

**Answer**—That's a good question. I think this is an important question. In order to answer your question, I would have to relate some work that we did in an attempt to induce multiple ovulations by using prostaglandin and GNRH in 20 beef cattle. We only had one that had two ovulations and all the others had one. I wouldn't say that that was necessarily due to treatments, since we probably would find some that would have multiple ovulations anyway. I don't think there is any problem whatsoever with the use of either prostaglandin or GNRH.

**Question**—Jack Tate, Virginia. I'd like to ask a question of Dr. Shuler or anyone else that cares to comment on it. I've heard just recently that there is the possibility of reducing fertility subsequent to estrogen administration on cow conditions such as pyometra or any other reason to use it, like to empty the uterus. Is there any definite information that this is true? Are we getting impaired fertility? Some people are saying that they just can't get these cows bred if they have been given estrogen.

**Answer**—We went into this. This is one reason why I am a little skeptical of hormones, particularly estrogenic hormones. I have noticed an increased tendency toward follicular cysts in cows that are given estrogen. In high-producing herds that are already stressed nutritionally, you may be better off not to use too much estrogen. In your average herds

that maybe are not producing up to expectations, you might get by with it because the added stress of high production is not there. I agree, there are problems with it. I like to use hormones more as a last resort than as a routine practice.

**Question**—Everybody talks about using oxytocin. Does anybody have any comment on ergonavine? Why not use ergonavine immediately postpartum, after a dystocia to involute that uterus, or even at a later state. I'd like to have some comment on that.

**Answer**—With ergot products, the uterus must be sensitized to estrogen just as in oxytocin. We usually use oxytocin, but we have used the same ergot products or ergot derivatives for the same procedure. I don't know anything to say as far as their being detrimental at all.

**Question**—My partner was recently at the University of Minnesota. They were recommending not using estradiol or ECP treatment, but rather using DES in these cows for fertility. Would one of the speakers care to comment?

**Answer**—If I understand you correctly, you're saying that stilbestrol is recommended instead of ECP or estradiol. My observations have been exactly the opposite. We see more trouble with stilbestrol in cattle than with ECP or estradiol, particularly. I didn't practice too many years when stilbestrol was on the market. I used it about 2½-3 years and I seemed to have a lot more trouble with it maybe because of the base of it, I don't know. Dr. Bierschwal, you may have an observation on this.

**Dr. Bierschwal**—The only thing that I would like to comment on is that reproductive biologists get all over veterinarians about overdoses of estrogens and I think probably 10 mg is a huge dose for most of these postpartum cows. Probably we should be talking about 2-3 mg of estradiol. You get a good effect on the uterus. Probably we overdose diethylstilbestrol, too, but again I think maybe lowering the doses and getting the desirable effect with it may prevent this.

**Dr. Jack Britt**—The only comment I would like to make is that estrogen in the blood is about 1000 times lower than progesterone. The peak level of estradiol which occurs at estrus is about six to eight picograms per ml. That's 10<sup>-12</sup> grams. The peak level of progesterone that occurs in the blood during mid-cycle is about six to eight nanograms per ml, that's 10<sup>-9</sup>. I'd like to point out that we can induce the LH surge in ovariectomized heifers by giving them 4/10 ml of estradiol. We can get levels in ovariectomized heifers, estrogen levels comparable to those that occur around the time of parturition by giving 6 mg of estradiol. I think Dr. Bierschwal made a good point in that you have to recognize that the animal normally sees very minute quantities of estrogen in comparison to the amount of progesterone which he sees. So, if a

50 mg dose of progesterone gets the job done, then you ought to be thinking about a 0.5 mg dose of estradiol to give the animal the same kind of response.

Question—After the injection of GNRH was there a critical evaluation of the involution of the uterus?

Answer—Yes, and I'm sorry that I didn't bring that slide. We have published the data on the uterine involution aspects after GNRH treatment. We see a more rapid involution of the uterus after GNRH treatment for about the first 15-20 days. We suggest that this occurs because the cow forms a corpus luteum, progesterone is produced, and progesterone has quite opposite effects of estradiol on blood flow to the uterus and water retention by the uterus. By three weeks after GNRH there was no difference in uterine involution based on the diameter of the previously pregnant horn, compared to the control cows.

Question—Dr. M. L. Weldy, Goshen, Indiana. Dr. Bierschwal, has there been any work done at all relative to ergonavine products vs. the estrogen product as to the activity of the uteri?

Answer—Not to my knowledge. But just from clinical observations and using oxytocin, say 24-36 hours after parturition, we did not get the desired effect, but you could prime the animal. At one time, I used DES and got a good response and did the same with estradiol. I can't give you any scientifically controlled work on it. I would like to mention, as I am sure you are all aware, that for aborting feedlot heifers, diethylstilbestrol has been much more effective than ECP.

Question—Dr. Jerry Hackett, Manchester, Tenn. I thought I would give you a practice tip on uterine treatment, and you might have a comment on it, too. I use a Diamond's bovine esophageal feeder. It has a white plastic ball on the end of it, and it has a little sack you can pour your uterine treatment in. You can hold it up and it runs gravity flow real good and you don't have to worry about puncturing the uterus. It

has a large-bore plastic tubing with it. I was reading in the VMSAC an article about the use of ECP intravenously prior to Cesarean sections. Has anybody ever used any? In dogs they were getting stronger viability of the offspring. The uterus was less vascular at the time of Cesarean section and that way you got less blood loss.

Answer—I don't understand whether estradiol, ECP was used prior to Cesarean section?

Dr. Jerry Hackett—They used it 30 minutes prior to C-section.

Answer—I don't know. I have not used it prior to C-section. Dr. Hackett—I tried it on a couple and they didn't seem to bleed as much.

Answer—We have used dexamethasone for anticipated Cesarean sections, and, according to clinical observation, I thought we got along a little better. Again there is no controlled work on it.

Question—I'd like to ask Dr. Schuler about his combination for intrauterine infusion, if one was going to use it.

Moderator—While Dr. Schuler is up here, I'd like for him to give any suggestions on the possibility of intrauterine infusion of ECP or estrogen-type hormones rather than injection and the amount he might use.

Answer—Concerning gentacin or gentamicin, normally we use about 125 to 150 mg QS, just about 30 cc of saline. There again, you'll find different dosage levels for different practitioners, but we seem to get a pretty good job with gentamicin. On large uteri filled with pus, I haven't used gentamicin. It is generally the cow that may be 45-60 days postpartum with pyometra that is a relatively low grade of infection. Low grade endometritis is characterized by flakiness in the cervical mucus, etc. We seem to get a good job with gentamicin here. I have not used it in these cows that are 3-4 weeks postpartum and have relatively large uteri. Dr. Jenks, in reference to intrauterine ECP or estradiol, I have not used this in my practice.