USING THE OVSYNCH PROTOCOL FOR PROMPT RE-INSEMINATION OF COWS DIAGNOSED OPEN AT PREGNANCY CHECKS

J. S. Stevenson

Summary

Using the Ovsynch protocol to prepare cows for re-insemination proved to be very effective. Its use guarantees that all cows found open at pregnancy diagnosis are re-inseminated promptly within 10 days, and the average pregnancy rate of 28.7% in 136 cows was acceptable. Pregnancy rates were not different whether or not estrus was detected in cows at the timed insemination, but they tended to be greater at second services compared to other repeat services. The Ovsynch protocol is an effective tool to use to ensure prompt re-insemination of open cows.

(Key Words: Ovsynch Protocol, Open Cows.)

Introduction

Finding cows not pregnant at pregnancy diagnosis is frustrating. But what is done at that time is critical for getting those cows inseminated as quickly as possible. The reason for diagnosing pregnancy is to identify the nonpregnant cows!

Traditionally, the recommendation for handling open cows was for the veterinary practitioner to palpate the ovaries and determine if a functional corpus luteum (CL) was present that should respond to an injection of prostaglandin $F_{2\alpha}$ (PG). When a cow has a functional CL, PG induces luteolysis (death) of the CL, allowing the cow to come into estrus in the next 2 to 5 days. Although this method is the best practice to follow to prepare cows for prompt re-insemination, it has two disadvantages: 1) errors in palpation and 2) missing expressed heats of cows because of inadequate heat detection. The first disadvantage occurs because palpation is difficult and not always accurate. For example, the probability of finding a CL and then diagnosing it to be functional (able to respond to PG) is about 80%. In addition, the probability of not palpating a functional CL when it is present is about 30%. The second disadvantage of using PG, even when the diagnosis of a functional CL is accurate, is that not all estrus activity after PG is observed. As a result, too many cows are not promptly re-inseminated and can become "lost" in the herd, until they are either detected in heat or later "found" in the herd after analysis of records.

Using the Ovsynch protocol may be one solution to this problem. The Ovsynch protocol is accomplished by injecting gonadotropin-releasing hormone (GnRH) 7 days before PG. About 48 hrs after PG, a second injection of GnRH is given followed by insemination about 16 to 18 hrs later. The objective of this demonstration was to determine the effectiveness of using the Ovsynch protocol to re-inseminate promptly all cows palpated open at pregnancy diagnosis.

Procedures

Beginning in October 1998, when lactating cows were palpated open at our twice monthly pregnancy checks, cows were injected with 1 cc of GnRH (50 µg of Cystorelin®, Merial, Iselin, NJ). The following Monday afternoon (7 days later) between 3 and 5 p.m., each cow was injected with 25 mg of PG (Lutalyse®, Pharmacia and Upjohn, Kalamazoo, MI). On Wednesday (48 hrs after the PG injection), each cow was given a second GnRH injection and then

inseminated 16 hrs later on Thursday morning. Anytime a cow was detected in heat after the initial injection of GnRH at pregnancy diagnosis, she was inseminated according to detected estrus, and the remaining protocol was discontinued. The percentage of cows conceiving was determined by either palpation of uterine contents after 38 days or by return to estrus following insemination.

Results and Discussion

The average pregnancy rate achieved by this demonstration in 136 cows was 28.7%. Of 136 cows begun on the Ovsynch protocol, 14 (11.1%) were detected in estrus before the protocol was completed and inseminated based on signs of heat. Only one of those 14 cows conceived (7.1%), whereas 38 of the remaining 122 cows that completed the Ovsynch protocol conceived (31.2%).

Of those cows detected in estrus before the completion of the Ovsynch protocol, one was in heat 4 days after pregnancy diagnosis, two on the fifth day, three on the seventh day (day of PG injection), four on the eighth day (1 day after PG injection), and four on the ninth day (day of second GnRH injection).

Of those detected in estrus (19.3%) at the time of the second GnRH injection or at the timed breeding of the protocol, pregnancy rates were 26.1% compared to 29.5% in those cows that were not observed in estrus.

Pregnancy rates were classified according to the ovarian structures palpated at the time of pregnancy diagnosis (Table 1). Pregnancy rates were similar whether or not a CL was palpated along with at least one palpable follicle. Three of four cows with at least one large, cystic follicle conceived indicating that the Ovsynch protocol may be an effective treatment for this ovarian abnormality.

The pregnancy rate for cows inseminated for the second time since calving averaged 44.8% and tended ($P<.10$) to be greater than that in all other cows that were inseminated at other repeat services (24.3%). Pregnancy rates were very similar for cows inseminated for either the third (25%), fourth (23.1%), or fifth or more times (24.3%).

These results indicate that the Ovsynch protocol is an effective tool, because it guarantees that all open cows are re-inseminated within 10 days after their pregnancy status is determined and achieve acceptable pregnancy rates.

Table 1. Pregnancy Rates Based on Palpated Ovarian Structures

Ovarian Structure	No.	% of Total	Pregnancy Rates, %
CL + follicle(s)	77	56.6	28.6
Follicle(s)	47	34.5	25.5
Cyst	4	2.9	75.0
No significant structures	3	2.2	66.7
Unknown	5	5.9	0.0