

sociated with increased risk for reproductive losses, and as such taken as seroprevalence cut-off value. Validation of this ELISA in Canada with 30 bulk milk samples from herds with a known serostatus showed similar results. When using this ELISA on 358 bulk milk samples from PEI dairy farms, a herd-prevalence of 8% was found. This is lower than the earlier mentioned 20.3%. We are presently validating this ELISA in a similar way as in The Netherlands with individual milk and serum samples to confirm our results.

### Significance

*N. caninum* has emerged as a major cause of abortion and reproductive failure in cattle. Identification of

infected herds is necessary to implement control strategies to minimize the impact of this parasite on the dairy industry. Thus, research into the development of cost-effective surveillance techniques is required to determine the herd- and cow-level risk factors for *N. caninum* infections in Canada. The validation of the bulk milk ELISA will provide a significant step forward in the design of future studies examining the epidemiology and control of bovine neosporosis.

## Comparison of the Ovsynch Protocol and Exogenous Progesterone with Insemination at an Induced Estrus as Therapeutic Strategies for Ovarian Cysts in Lactating Dairy Cows

**M.B. Crane, DVM<sup>1</sup>; P. Melendez, DVM, MSc, PhD<sup>1</sup>; C.A. Risco, DVM, DACT<sup>1</sup>; A. de Vries, PhD<sup>2</sup>; L.F. Archbald, DVM, MSc, PhD, DACT<sup>1</sup>**

<sup>1</sup>Department of Large Animal Clinical Sciences, College of Veterinary Medicine, University of Florida, Gainesville, FL

<sup>2</sup>Department of Animal Sciences, University of Florida, Gainesville, FL

### Introduction

It has been suggested that an underlying mechanism in the development of bovine ovarian cysts involves a hypothalamic lesion which causes follicular estrogen to be ineffective in inducing a GnRH/LH surge at the time of estrus. This lesion involves the estrogen receptor alpha (ER $\alpha$ ). Furthermore, it has been speculated that treatment with progesterone may induce the ER $\alpha$  in the mediobasal hypothalamus which will foster a GnRH/LH surge in response to follicular estrogen. Collectively, this information suggests that therapeutic strategies for bovine ovarian cysts could involve either the use of GnRH or exogenous progesterone. An intravaginal progesterone insert (EAZI-BREED™ CIDR®) has been approved for use in lactating dairy cows. The use of a CIDR to synchronize estrus detection is relatively simple and less labor intensive than the OvSynch protocol. Therefore, it could be a more acceptable treatment for ovarian cysts in lactating dairy cows. However, there

is no information available concerning the comparative efficacy of these two treatment strategies. The hypothesis of this study was that lactating dairy cows with ovarian cysts treated with exogenous progesterone, a luteolytic dose of PGF2 $\alpha$ , and inseminated at an induced-estrus, will have a higher pregnancy rate compared to cows with ovarian cysts subjected to the OvSynch protocol. The purpose of this study was to compare the effectiveness of these two protocols.

### Materials and Methods

This study was conducted in a single herd with 1,500 milking cows in northeast Florida. A total of 401 lactating dairy cows with ovarian cysts were enrolled in the study during weekly farm visits from October 13, 2003 to September 20, 2004. All cows beyond the voluntary waiting period (60 days) and diagnosed with ovarian cysts were randomly allocated to two treatment groups on the day of diagnosis (Day 0). The diagnosis of

ovarian cysts was based on per rectum palpation and ultrasound examination of the ovaries and uterus. Cows in the OvSynch group (n = 201) were treated with GnRH (100 µg, IM; Cystorelin) on day 0, PGF2α (25 mg, IM; Lutalyse) on day 7, GnRH (100 µg, IM; Cystorelin) on day 9, and timed inseminated 16-20 hours later. Cows in the CIDR group (n = 200) were treated with a CIDR insert on day 0 for seven days. On day 7, the CIDR was removed and cows were treated with PGF2α (25 mg, IM; Lutalyse). All cows in Group 2 were observed for estrus, and cows exhibiting estrus within seven days following removal of the CIDR were inseminated. Baseline data for parity (primiparous/multiparous), days-in-milk (DIM), season, body condition score and milk production on the day of diagnosis were compared using Chi-square and ANOVA. The outcomes of interest for this experiment were the likelihood to be inseminated, the presence of a CL on day 21 (indicating return to normal cyclicity), conception rate and pregnancy rate. Data for these variables were analyzed using logistic regression adjusting for parity, DIM, BCS, season and milk production on the day of diagnosis.

### Results

The percentage of cows inseminated in the OvSynch and CIDR groups was 82% (164/201) and 44% (87/200), respectively. When the likelihood for a cow to be inseminated was examined by logistic regression, the only significant variable remaining in the model was the effect of treatment. Cows in the OvSynch group were 5.6 times more likely to be inseminated than cows in the CIDR group (95% CI= 3.5- 8.8; P < 0.0001). The percentage of cows with a CL on day 21 was 83 (136/163) and 79% (137/174) for the OvSynch and CIDR groups, respectively. There was no significant difference between treatments in the percentage of cows returning to cyclicity. No other explanatory variables were significantly associated with this outcome. The conception and pregnancy rate for cows in the OvSynch group was 18%

(29/158). Conception and pregnancy rates for cows in the CIDR group was 23% (19/82) and 9.5% (19/200), respectively. Logistic regression of the full model and backward elimination showed no significant effect of treatment on conception or pregnancy rate. The significant variables associated with conception and pregnancy rate were parity and level of milk production. Primiparous cows were 4.1 times more likely to become pregnant than multiparous cows (95% CI= 1.5-11.9; P < 0.01). Cows in the lowest 25th percentile of milk production on the day of diagnosis (< 49.9 lb; 22.7 kg) were 0.1 times less likely to become pregnant than cows in the top 25% (> 79.2 lb; 36 kg; 95% CI= 0.01-0.99; P < 0.04).

### Significance

Exogenous progesterone with insemination at detected estrus and the OvSynch protocol were just as effective as therapeutic strategies for ovarian cysts with respect to return to cyclicity, conception and pregnancy rate. Success of treatment in the CIDR group depended on detection of estrus, which was 44% in this farm. In a herd with a higher rate of estrus detection, the CIDR protocol may result in a higher pregnancy rate with less labor and cow handling. However, in a herd with a lower rate of estrus detection, the OvSynch protocol may be a better treatment for ovarian cysts. An economic analysis is warranted to determine which protocol has a better cost-benefit ratio and at what level of estrus detection this may change. An interesting finding in this study was that primiparous cows were more likely to become pregnant than multiparous cows. Although primiparous cows are often considered to be at a lower risk of becoming cystic than multiparous cows, when the condition occurs they may have a better response to treatment. Cows with relatively low milk production on the day of diagnosis were less likely to become pregnant following treatment. Further study is needed to determine if this is a consistent association and the possible underlying mechanism.