

Effect of removal of follicular cyst contents on success of Ovsynch in dairy cows: a clinical trial in private practice.

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INTRODUCTION

- Follicular cysts in dairy cows cause abnormal ovarian cyclicity and decrease reproductive performances in dairy herds, particularly in management systems that rely on heat detection.
- Many treatments have been developed and tested to manage follicular ovarian cysts; among these, ovulation synchronization (GnRH-PGF2-GnRH-Timed AI; Ovsynch) is an option that is easy to implement and gives acceptable results. It has been anecdotally suggested that removal of cyst contents by needle puncture could improve treatment outcome.
- The purpose of this study was to evaluate the effect of removing cyst contents by needle puncture on conception rate in dairy cows treated for follicular cysts with Ovsynch. The trial was conducted using data collected over regular herd health visits in a private practice.

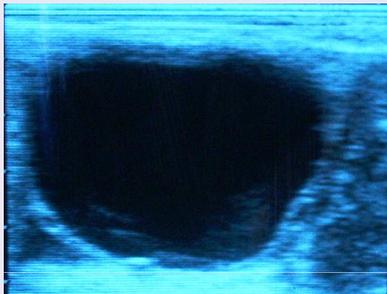


Figure 1. Follicular ovarian cyst (ultrasound view)

MATERIALS AND METHODS

Study design:

In a dairy practice of southern Quebec, cows with follicular cysts diagnosed by rectal palpation in regular herd health visits were included in a research protocol.

The **case definition** for cows to be included in the trial was: fluid-filled structure > 2,5 cm, abnormal cyclicity, 1st diagnosed cyst in lactation, not necessarily 1st breeding in lactation and days in milk > 45.

MATERIALS AND METHODS

Treatments:

Cases were alternatively submitted to two treatments:

A : Ovsynch and simultaneous removal of cyst contents by needle puncture (on day 0)

B : Ovsynch without puncture.



Figure 2. Needle-mounted rod for cyst puncture



Figure 3. Rod ready for use (inserted in sleeve)

Data collection:

All data were collected over a 12-month period and were compiled in the herd health monitoring software DSA.

Success of treatment was defined as conception at the Ovsynch breeding. Variables compiled for analysis were: treatment (TRT), lactation number (LN), days in milk at treatment (DIM), AI number (AINUM; 1st, 2nd...), calendar month at breeding (MO) and pregnancy diagnosis (PREG). Cow records were verified to monitor that veterinarians and producers complied to the defined protocol.

Statistical analysis

Logistic regression (Statistix software) was used to test the effect of treatment on PREG, considering all relevant confounding variables.

RESULTS

Table 1. Descriptive statistics

	Treatment A Ovsynch + puncture	Treatment B Ovsynch
Initial number of cows included	162	156
Cases rejected (non-conformity)	114	105
Cows included in analysis	48	51
Average DIM at breeding	157	121
Average LN (lactation number)	3,7	3,4
Average AI number (1 st , 2 nd ...)	2,3	1,7
Conception rate	45,8 %	43,1 %

Descriptive statistics:

The total number of cows started on treatments A or B was 328. Cow record screening revealed that 229 cases did not comply to the protocol, principally due to incorrect reported breeding date (cows not bred exactly 10 days after onset of ovsynch) or DIM < 45 at treatment onset.

The final database included 48 cows for treatment A and 51 cows for treatment B. Conception rates were 45,8 % for treatment A and 43,1 % for treatment B.

Table 2. Logistic regression analysis

Effect of treatment (TRT) on pregnancy diagnosis (PREG)		
Variables included in final model		P-value
TRT (treatment)		0,63
DIMCAT (DIM categories)		0,06
LNCAT (LN categories)		0,01
Corrected conception rates		Odds Ratio
Treatment A	47,0 %	1,23 (95% C.I. : 0,53 - 2,86)
Treatment B	41,9 %	

RESULTS

- Categorized variables were generated based on cross-tabulation against the outcome variable: DIMCAT (1 = 75<DIM<200; 0 = < 75 or > 200); LNCAT (1 = LN < 5; 0 = LN > 4); AINUMCAT (1 = AINUM > 1; 0 = AINUM = 1) and MOCAT (1 = October to April; 0 = May to September). Variables retained (P < 0.20) in the complete model included : TRT, DIMCAT, LNCAT, TRT*DIMCAT and TRT*LNCAT. Analysis revealed that all interaction terms could be deleted from the model.
- The final model included TRT, DIMCAT and LNCAT and showed that treatment had no significant effect on the outcome (P = 0.63), Odds Ratio = 1.23, 95 % confidence interval: 0.53 to 2.86. The corrected conception rates, considering the logistic model, were 47,0 % for treatment A and 41,9 % for treatment B.

CONCLUSION

- The results of this study suggest that removal of follicular cyst contents by needle puncture does not significantly improve conception rate after an Ovsynch treatment. However, the small sample size (n = 99) greatly limits the interpretation of the results since type-2 error may have made it impossible to reveal a significant effect.

A non-significant 5.1 % improvement in conception rate was found with cyst contents removal. Could such a slight improvement justify the use of this labor-intensive approach ? If so, the study should be repeated with a more appropriate sample size. This trial also underlines the importance of data recording and compliance monitoring in clinical trials as well as in dairy practice in general.

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