

The Effect of Postparturient Uterine Douching on the Risk for Clinical Metritis in Lactating Holstein Dairy Cows

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Introduction

Clinical metritis in the lactating dairy cow leads to decreased reproductive efficiency, decreased milk production, and predisposes the cow to other metabolic diseases. Postparturient uterine douching was historically used in humans as a prophylaxis and treatment for postpartum uterine disease. Some producers and veterinarians have advocated the use of postpartum uterine douching in dairy cows to help prevent metritis and improve uterine health, although there is little scientific evidence for its efficacy. Metritis represents a serious concern for modern dairy cattle, with a median lactational incidence of approximately 10%, and many herds have an incidence of 20–30%.¹ The average cost of a case of metritis was estimated by Overton using stochastic simulation to be approximately \$350.^{2,3} This represents tremendous potential in lost income to the dairy due to a greater risk of culling, loss of milk production, decreased reproductive efficiency, and increased treatment costs. The objective of this study was to determine whether cows that undergo a uterine douche shortly after calving are at decreased risk for clinical metritis.

Materials and Methods

The study was conducted on a single 12,000 cow dairy in Idaho. The sample size was calculated based on detecting an improvement in first service conception risk of six percentage points or a six percentage point difference in risk of experiencing metritis, while allowing for a 12% loss to follow-up. Immediately following parturition, 3,050 cows were randomized via computer generated random numbers into one of two groups. Group 1 (Douche) received the standard fresh cow processing treatments and a uterine douche consisting of 2 L of hypertonic saline mixed with 30 mL of 10% povidone iodine delivered per vagina with an oral calf feeder. Group 2 (No Douche) received the standard fresh cow processing treatments but no uterine douche. Following processing, cows were managed as per ordinary farm routine. A trial code was created in the on-farm record system to facilitate tracking of the study animals.

Results

A total of 1,903 cows and 1,106 heifers were included in the final analysis. Forty-one cows with a diagnosis of abortion were excluded. Clinical metritis (CM) was diagnosed by on-farm personnel in 30.4%, 5.4%, and 7.3% of lactation 1, lactation 2, and lactation 3+ cows, respectively. Retained placenta, dystocia, and twins were all significantly associated ($P < 0.05$) with an increased risk of metritis, but postpartum uterine douching had no effect on metritis risk. The incidence of metritis was 15.1% in both the treatment and control groups ($P = 0.95$).

Significance

Reducing the risk of acute puerperal metritis by six percentage points would represent an overall savings of at least \$10 per cow in the lactating herd and provide at least a 3:1 return on investment when compared to uterine douching.^{2,3} This level of risk reduction was the basis for our sample size calculation, but we found no evidence of a benefit to prophylactic or metaphylactic douching with 30 mL of 10% povidone iodine solution mixed with 2 L of hypertonic saline in this study population. However, given the large negative impact of metritis on cow health, performance, and profitability, additional management approaches including nutritional interventions, improved housing and cow comfort, accurate diagnoses and treatment, and other pharmaceutical interventions warrant further clinical investigation.

References

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