

Effect of Flunixin Meglumine Treatment Following Parturition on Cow Health and Milk Production

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Introduction

A double-blind randomized clinical trial was conducted on two Holstein dairy farms: a research facility in Ontario, Canada and a large commercial dairy farm in Michigan. It was hypothesized that a non-steroidal anti-inflammatory drug (Banamine) will reduce pain after calving, thus improving individual cow well-being, and in turn improve milk production, reduce periparturient disease, enhance reproductive performance, and limit early removal from the herd in the subsequent lactation.

Materials and Methods

At both sites, cows received flunixin meglumine (Banamine) at a dose of 0.5 to 1.0 mg/lb (1.1 to 2.2 mg/kg) intravenously based on a fixed volume of 25 mL and 22 mL for cows and heifers, respectively, approximately two hours following calving; and a second injection at the same dose and by the same route, approximately 24 hours later. Calving difficulty was scored on a scale of 0 to 3 (0-unassisted, 1-easy pull, 2-difficult pull (calving jack used), 3 C-section). For assisted calvings, repositioning of the calf was recorded as a dichotomized variable. Weekly milk production and clinical health outcomes

were recorded. Dichotomous data were analyzed using logistic regression, while milk production was analyzed using mixed linear models.

Results

A total of 148 and 1,174 cows were enrolled on the study at the Ontario and Michigan sites, respectively. No significant effect of treatment was identified for milk fever, abomasal displacement, clinical ketosis, or mastitis. However, significant effects of treatment were identified for both risk of retained placenta and metritis. Cows treated with flunixin meglumine shortly following calving were 2.5 (odds ratio (OR) = 2.5, $P < 0.001$) times more likely to have a retained placenta and 1.5 (OR = 1.5, $P = 0.001$) times more likely to be diagnosed with metritis. Milk yield was not significantly different between the two treatment groups.

Significance

Treatment with a non steroidal anti-inflammatory drug (NSAID) on the day of calving increased the risk of retained placenta and metritis. Based on these results, NSAID therapy on the day of calving is not recommended.