



## Effect of flunixin meglumin, recombinant bovine somatotropin and/or human chorionic gonadotropin in reducing embryo mortality in nelore cows (*Bos taurus indicus*)

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### Introduction

Pharmacologic strategies have been employed to reduce the embryonic mortality in cattle (2, 4). Aim was to compare the effect of Flunixin Meglumine (FM), Recombinant Bovine Somatotropin (bST) and/or Human Chorionic Gonadotropin (hCG) on the reduction of embryonic mortality in Nelore cows between the 15 and 19 days of gestation. The hypothesis is that cows treated with FM, bST and/or hCG show lower embryo mortality and greater conception rates.

### Material and Methods

Lactating Nelore cows (n = 975), 35 to 70 days postpartum, received on D-10 an intravaginal device containing 1g of Progesterone (DIB®) associated with a injection of 2mg of estradiol benzoate (Gonadiol®), i.m. On D -2 the device was removed and animals received one injection of 112,5µg of D-Cloprostenol (Preloban®); 300UI of Equine Chorionic Gonadotropin (Folligon®) and 1mg of Estradiol Cipionate (ECP®) i.m. After 48 hours from the last injection (D0), cows received Fixed Timed Artificial Insemination (FTAI) and seven days later were divided equitably in eight groups to receive one of the following treatments: nothing (Group Control; n = 124); 2,2mg/Kg of FM (Banamine®), i.m. on D16 (Group FM; n=122); 500mg of bST (Boostin®) s.c. on D7 (Group bST; n = 119); bST on D7 + FM on D16 (Group bST/FM; n = 121); 2.500UI of hCG (Chorulon®) i.m. on D7 (Group hCG; n = 124); hCG on D7 + FM on D16 (Group hCG/FM; n = 124); bST and hCG on D7 (Group bST/hCG; n = 120) or bST and hCG on D7 + FM on D16 (Group bST/hCG/FM; n = 121). Blood samples were collected on D7 and D16, to measure plasmatic progesterone (P<sub>4</sub>) concentration through radioimmunoassay. Pregnancy diagnosis was performed 40 days after FTAI by ultrasound. Pregnancy rates were analyzed by logistic regression using the GLIMMIX procedure of SAS and the values of P<sub>4</sub> were transformed to square root and analyzed by ANOVA (PROC GLM).

### Results and Discussion

There was no difference in conception rates for different treatments (p = 0.4995), which were 57.26%, 47.54%, 60.50%, 56.20%, 59.68%, 64.52 %, 63.33% and 64.46% for groups Control, FM, bST, bST/FM, hCG, hCG/FM, bST and bST/hCG/FM, respectively. However, when the conception rate was evaluated considering all the females treated or not with hCG, there was a higher rate of conception on treated vs. non-treated cows (62.99% vs. 55.35% respectively, p = 0.01). This difference was not observed among females treated or untreated with bST (61.12% vs. 57.29% respectively, p = 0.21) nor FM (58.20% vs. 60, 16% respectively, p = 0.46). Plasma concentrations of P<sub>4</sub> on D7 and on D16 did not differ (p = 0.9081 and p = 0.0888, respectively) among the different groups. Concentrations of P<sub>4</sub> on D7 did not differ (p > 0.05) among non-pregnant cows and heifers treated with hCG, bST or FM. On D16, for females treated with hCG, the concentrations of P<sub>4</sub> were greater for pregnant compared to non-pregnant females (10.62 ± 0.39 vs. 9.55 ± 0.37, respectively; p = 0.0503). It was concluded that cows treated with hCG 2.500UI seven days after TAI have lower embryo mortality and higher conception rates at 40 days of gestation.

### References

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