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EARLY EMBRYO MORTALITY IN BEEF COWS AFTER FIXED TIME ARTIFICIAL INSEMINATION (FTAI) AND HORMONAL TREATMENTS

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Failure in the maternal recognition of pregnancy is implicated with early embryo mortality. This study evaluated strategies to optimize luteal function of cows after FTAI. Forty-five Nelore (*Bos taurus indicus*) cows received one progesterone (1.9 g) intravaginal device (P4D) and 2mg estradiol benzoate. Seven days later received 0.25 mg of PGF2α analogue. Two days after that the P4D was removed and 0.5 mg of estradiol cipionate was given. FTAI (D0) took place 48 h after P4D removal. Females were distributed into: Tcont (n = 9) - nothing further; TPGF (n = 10) - 0.25 mg of PGF2α analogue on D14, D16 and D18 (negative control group); TGnRH-hCG (n = 14) – 200mcg of gonadorrelin (GnRH) on D5 and 2500 IU of hCG on D12; and TeCG (n = 12) - 400 IU eCG at P4D withdrawal. All drugs but P4D were given IM. Cows were submitted to: plasma progesterone determination [P4] on D14, D16, D18, as well as ultra-sound examination of ovaries and transcervical embryo collection on D18. Concepti were classified according to integrity and length (whole = WH, fragmented = FR or severely fragmented = SF). Results were analyzed through ANOVA or the Chi-square test. Regardless of treatment, recovery rate was 75.5% (34/45) and retrieved concepti were 12 WH, 4 FR and 18 SF. Early embryonic losses were: 40% (2/5) for Tcont; 41.7% (5/12) for TGnRH-hCG ; 25% (2/8) for TeCG and 100% (9/9) for TPGF. The number and the size of CL were smaller ($P < 0.05$) for TPGF when compared to the other groups. TPGF cows produced only SF concepti and their [P4] were subluteal (<1 ng/mL) on D16 and 18. TGnRH-hCG cows had greatest CL numbers, CL size and [P4], which was 14.8±2.1; 18.0±2.4 and 18.6±2.3 ng/mL, respectively on D14, 16 and 18. No difference was found ($P > 0.05$) between [P4] of Tcont and TeCG (both above 1ng/mL). The [P4] on D18 was subluteal (<1ng/mL) only for cows that produced SF conceptus or did not conceive. [P4] was above 7.57ng/mL for cows that produced WH or FR conceptus. Under the conditions above described, the conclusions are: 1) SF conceptus relates with embryonic loss; 2) Increased [P4] between D14 and 18 does not ensure embryo survival; 3) PGF2α on D14 promotes luteolysis in cows already pregnant and serves to demonstrate the morphology of concepti that recently underwent embryo death; 4) No tested strategy significantly minimizes embryo mortality up to D18. [Financial support: EMBRAPA (03.09.02.004)].

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