Animal Reproduction

AI and IATF

Treatment with EB or injectable P4 in Nellore (Bos indicus) heifers on day 14 of doppler resynchronization protocol for TAI

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The objective of this study was to evaluate the efficiency of super-early resynchronization protocol in Nellore heifers using EB or injectable P4 (iP4) on day 14 (D14) after first TAI (D0; 2×2 factorial arrangement). Heifers (n=1116) were randomly distributed in 4 treatment groups on D14: 1) received only a intravaginal P4 device (P4D; Fertilcare®, MSD, Brazil; n=279); 2) received a P4D and 1mg of EB (Fertilcare sincronização®, MSD, Brazil; n= 277); 3) received 140mg of short-action iP4 (Progecio®, Agener, Brazil; n= 279); and 4) received a P4D, 1mg of EB and 140mg of short-action iP4 (n= 281). P4D was removed on the day of pregnancy diagnosis (D22) using Color Doppler ultrasonography (Mindray® M5Vet, China) (Ginther, 2007). Heifers with a CL vascularization greater than 25% were considered pregnant and were submitted to another US to confirm pregnancy and evaluate false positive rate. Heifers diagnosed as non-pregnant (with low or no CL vascularization) received 0,530 mg of cloprostenol (Ciosin®, MSD, Brazil), 200 IU of eCG (Folligon®, MSD, Brazil) and 0,5 mg of EC (Fertilcare Ovulação®, MSD, Brazil), and the dominant follicle (DF) was measured. Heifers were inseminated 48 hours later and were checked for pregnancy by US. Statistical analyses were performed by GLIMMIX procedure of SAS® (2×2 factorial arrangement). Since there was no interaction between EB and iP4 (P= 0.37), data was aggrouped and it is shown by main effects (EB × No-EB; P4 × No-P4). There was no effect of EB or iP4 on pregnancy rate [EB= 51% (283/558) *vs.* No-EB= 53% (296/558); P=0.43 and P4= 52% (290/560) *vs.* No-P4= 52% (289/556); P=0.95] and false positive rate of first TAI [EB= 10% (28/283) *vs.* No-EB= 14% (40/296); P=0.14 and P4= 13% (38/290) *vs.* No-P4= 10% (30/289); P=0.23]. It was verified that EB and iP4 decreased DF diameter at P4D removal on D22 [EB= 9.2mm *vs.* No-EB= 10.5mm; P<0.0001 and P4= 9.5mm *vs.* No-P4= 10.1mm; P=0.003]. However, only EB treatment decreased pregnancy rate of second TAI [EB= 39% (107/275) *vs.* No-EB= 47% (124/262); P=0.05 and P4= 43% (117/270) *vs.* No-P4= 43% (114/267); P=0.95] and tended to decrease cumulative (1^{st} + 2^{nd} TAI) pregnancy rate [EB= 68% (362/558) *vs.* No-EB= 73% (380/558); P=0.07 and P4= 71% (369/560) *vs.* No-P4= 71% (373/556); P=0.94]. It is concluded that iP4 and EB did not affect pregnancy rate of first TAI, and the use of iP4 did not increase the efficiency of Doppler resynchronization protocol. Furthermore, EB treatment decreased DF diameter and pregnancy rate of second TAI. Keywords: estradiol benzoate, resynchronization, Color Doppler ultrasonography.