Animal Reproduction

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OPU-IVF and ET

Relationship between the time of OPU and in vitro embryo production

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Resumo

The moment of the estrous cycle for ovum pick-up (OPU) in Bos taurus donors may be correlated with in vitro production of embryos. The present study aimed to evaluate the embryonic rate of oocytes aspirated in different phases of the follicular wave. Oocytes were obtained from Wagyu non-pregnant donors (N = 31) with a body condition score (BCS) between 3.5 and 4.25. On a random day of the estrous cycle (D -10) the animals were submitted to a pharmacological protocol for ovulation synchronization, based on the on 2mg of BE IM and intravaginal progesterone (P4) device. On the eighth day of the protocol (D -2), the device was removed and 10 µg of D-cloprostenol, 300 IU eCG and 1 mg EC were applied. The D0, 48 hours after P4 device removal, was considered the day of ovulation. From D0 onwards, the animals were divided into experimental groups: group D4 - OPU on day 04 after ovulation (N = 9), group D8 - OPU on day 8 after ovulation (N = 8), group D14 - OPU on day 14 after aspiration (N = 7) and group D18 - OPU on day 18 after ovulation (N = 7). The oocytes were selected and those with grade I, II and III were destined for IVF and on D7, the blastocyst rate was assessed. The data were analyzed for normality distribution by the Shapiro-Wilk test, transformation with log10 and analysis by ANOVA with Tukey's post hoc test using BioEstat® 5.3 software (p-value ≤ 0.1). Oocytes aspirated on day 4 after ovulation showed a higher rate of blastocysts when compared to animals aspirated on D8 (G4 = 32.17 ± 16.51 vs. G8 = 13.82 ± 16.74; P = 0,0025). In addition, the rate of blastocysts was lower from oocytes aspirated on D8 when compared to those aspirated on D18 (G8 = 13.82 ± 16.74 vs. G18 = 25.44 ± 15.96; P = 0.0025). There was no difference between the oocytes from the group D14 and the others (G14 = 20.76 ± 21.33). Oocytes from beginning of the first follicular wave, beginning and end of the second follicular wave presented the better blastocyst rates. We concluded that oocytes aspirated on D4, D14 and D18 may generate a higher rate of blastocysts.