STRATEGIES TO PREVENT THE PRESENCE OF A DOMINANT FOLLICLE (DF) BETWEEN DAYS 15 AND 20 OF THE COW ESTROUS CYCLE

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INTRODUCTION

Estradiol-17β (E_2) secreted by the DF plays a key role in triggering luteolysis in the cow. In addition, maternal recognition of pregnancy (MRP) requires an optimum uterine environment, which directly depends on luteal function and adequate levels of circulating progesterone. The aim of this study was to test different strategies to prevent the occurrence of a DF throughout the critical period for MRP, herein considered to be from D15 to D20 of the estrous cycle.

MATERIALS AND METHODS

A group of 23 mature, synchronized (ovsynch), cyclic, non-lactating Nelore cows (average body weight of 412.7±5.4 kg and average BCS of 5.5±.1) were randomly allotted to receive nothing (T_c ; n=7), 3000 IU of hCG on D5 (T_{hCG}; n=5), 5mg of E_2 on D12 (T_{E2}; n=6) or a combination of hCG and E_2 ($T_{hCG/E2}$; n=5). Expectation was that hCG would ovulate 1st wave DF inducing the formation of an accessory corpus luteum to increase progesterone plasma concentrations and that E_2 would reprogram follicle waves to prevent presence of DF during MRP.

Ultrasound evaluation was conducted *per rectum* from D12 up to ovulation by means of a scanner Aloka 500 coupled to a 7.5MHz linear probe. Two teaser males were joined to the cows on D12 and estrus behavior was checked and recorded twice daily (7 a.m. and 5 p.m.).

RESULTS AND DISCUSSION

The E_2 did not decrease the duration of estrous cycle (i.e. did not induce precocious luteolysis). All cows receiving hCG maintained accessory corpus luteum between D15 and D20. The number of days in which a DF was present in the ovary between D15 and D20 was different ($P<.05$) according to treatments: 3.4±.6 for T_C, 2.8±.7 for T_{hCG}, 3.3±.6 for T_{E2} and 0.6±.7 days for $T_{hCG/E2}$. Results suggest that 5mg of E_2 did not demise the original corpus luteum and the association between hCG and E_2 significantly ($P<.05$) reduced the number of days under influence of a DF throughout the critical period (D15-D20). It was concluded that the association between hCG (D5) and E_2 (D12) partially prevented the appearance and maintenance of a DF over the critical period for MRP (D15-D20).

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Financial support: EMBRAPA and FAPESP (99/03383-9 to MB)