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Histological characterization of bovine corpus luteum from females treated with different PGF2α and doses during metestrus or diestrus

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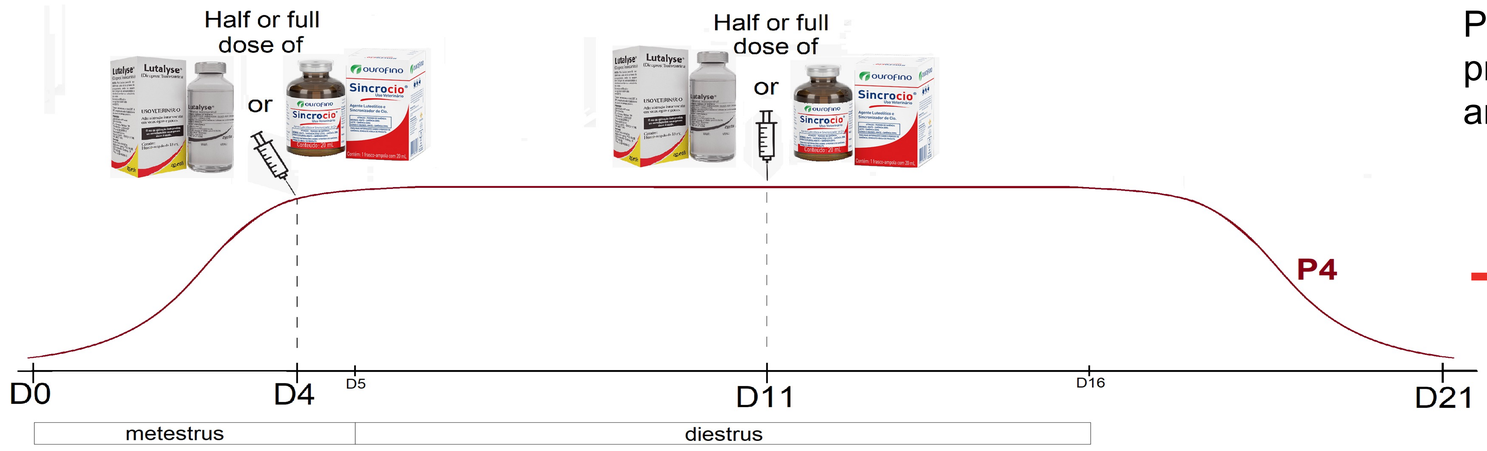
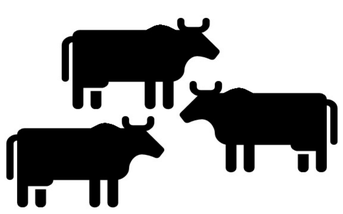
OBJECTIVE



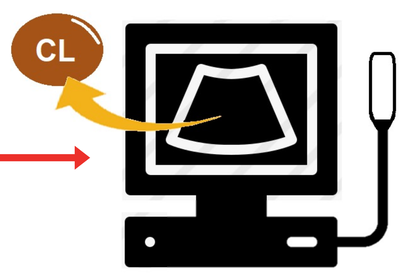
PGF2α analogues are widely used in the control of estrous cycle, promoting luteolysis and, consequently, apoptosis. Although there are few reports regarding the histological pattern of luteal cells.

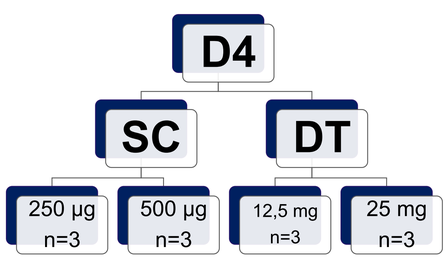
Luteolysis?
Histomorphometric characterization of small luteal cells and large luteal cells

MATERIALS AND METHODS

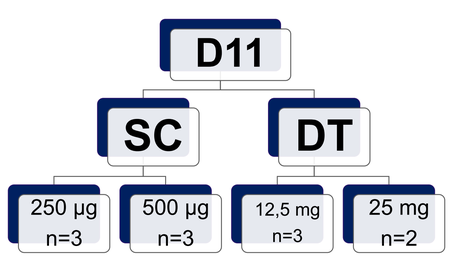


Synchronization of ovulation protocol



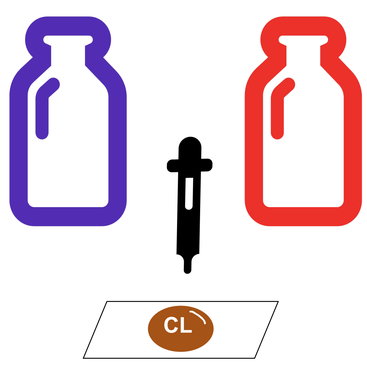


D4 – 4 days post-ovulation
D11 – 11 days post-ovulation



SC – Sodium Cloprostenol
DT – Dinoprost Tromethamine

Hematoxylin-eosin staining



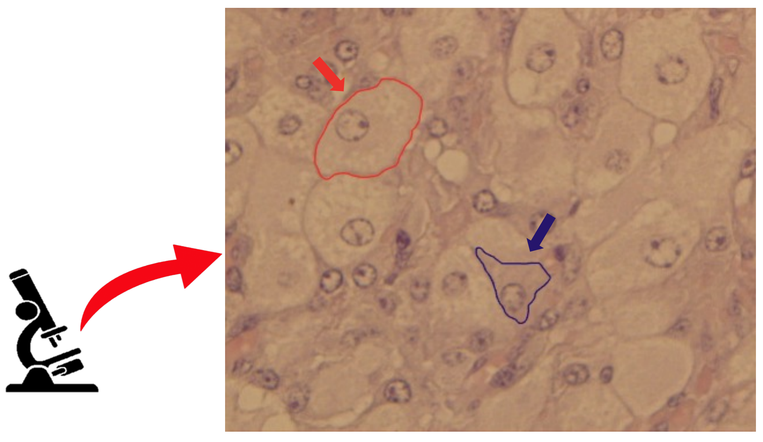
Statistical analysis: ANOVA followed by Tukey's test (SAS), at 5% significance level.

RESULTS AND DISCUSSION

	DAY			PGF			DOSE		
	4	11	P	DT	SC	P	50%	100%	P
SLC	452,1 ± 2,2	443,7 ± 2,6	0,6	447,4 ± 2,6	448,6 ± 2,1	0,5	435,2 ± 2,1	462,1 ± 2,6	0,4
LLC	$6377,7^{B}$ ± 36,1	$5208,1^{A}$ ± 27,7	0,02	6109,1 ± 34,2	5551,9 ± 33,2	0,3	5887,1 ± 33,8	5743,4 ± 34,2	0,5

This result indicates that any luteolytic agent, regardless of the dose, has no predicted result (induction of total luteolysis) in metestrus; this is because at D4 the CL is refractory to PGF, as it expresses vasoactives peptides (Levy N. et al. 2000. Biol. Reprod., 63:377-382) and because of its specificity in signal conversion mediated by gene expression of PGF receptors (Goravanahally M. et al. 2009. Biol. Reprod., 80:980-988).

Corpus luteum slide with hematoxylin-eosin staining.



The red arrow indicate a large luteal cell while the blue arrow indicate a small luteal cell.

CONCLUSION

In conclusion, the luteolytic efficiency is similar for both luteolytic agents regardless of the dose, being able to cause structural luteolysis. However, when analyzing the time of administration, the best luteolytic response occurred, as expected, in diestrus.

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FAPESP
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