ABSTRACTS

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Effect of aglepristone on T lymphocytes (CD4+, CD8+ cells) subsets defined by INF-γ and IL-4 synthesis in the bitch

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OBJECTIVES AND METHODS: Aglepristone is the only registered antiprogestin in veterinary medicine. It is a synthetic steroid with high affinity to nuclear progesterone receptor (nPR) and lower affinity to glucocorticoid receptor (GR) (1). Aglepristone is used for pregnancy termination, inducing parturition and for conservative pyometra treatment in bitches (2). However, there are only a few information about influence of aglepristone on immune cells. Mifepristone, an antiprogestin that is used in human medicine has a suppressive effect on mitogen-activated proliferation and cytokine production of human T-cells (3). It is probably caused by its agonistic action on GR (4). Aglepristone also has affinity to GR and similar structure to mifepristone. That might suggest some influence of aglepristone on T lymphocytes in the bitch. The aim of this study was to evaluate the effect of aglepristone in vivo, on some subpopulations of blood T lymphocytes in the bitch. The mononuclear cells were isolated from peripheral blood of 9 healthy bitches in diestrus (2nd-3rd week after estrus). Cells were incubated for 24 and 48 hours with 3 different algepriston dosages (30, 300 3000 ng/ml) and DMSO as a control group. After incubation cells were stimulated with jonomycyne/PMA for 4 hours. The lymphocytes subsets were evaluated by CD4 and CD8 antigens expression and IL-4 and IFN-gamma synthesis. The samples were marked by intercellular staining with monoclonal anybodies: rat anti-dog CD4-FITC or CD8-FITC and murine anty-bovine IFNγ-PE or IL-4-PE (AbD Serotec, Great Britain). The lymphocytes subpopulations were detected by FACSCalibur flow cytometer (Becton Dickinson, USA) with CellQuest software (Becton Dickinson, USA).

RESULTS: Results are expressed as percentage of positive cells within the gating area of lymphocytes. Percentage of lymphocytes T (CD4+ cells) after 24h of incubation in control group was 49±14.23 and in studied groups with dosages 30, 300 and 3000 ng/ml respectively were: 48.99±19.96; 49.1±17.92; 50.57±18.13. In the same subset after 48 hours of incubation cells were: 47.84±18.78 and 48.39±17.07; 51.95±14.68; 52.38±13.46 in studied groups. Analogically with above order the percentage of lymphocytes T (CD8+) cells were: 20.66±9.39; 22.16±12.58; 22.47±11.99; 22.88±11.92 after 24 hours of incubation and 13.39±7.99; 15.35±8.24; 15.30±7.68; 18.81±16.27 after 48h of incubation. Similar effects were observed in percentage of CD4+ or CD8+ cells producing INF-γ or IL-4. Means in the control group were similar to this in study groups and the standard deviation were high. There were no statistically significant differences (p<0.05) between control and studied bitches in different dosages after 24 and 48h of incubation.

CONCLUSION: Results might indicate that aglepristone has no influence on T-cells subsets in the bitch. However, to exclude its influence on T-cells the research on mitogen-derived proliferation should be performed.