

**Use of Immunomodulation in Persistent Post-breeding Endometritis.
Effect on Proinflammatory Cytokines IL1 β , IL6 and TNF α mRNA transcription studied
by Real Time PCR**

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In the accompanying paper* we have studied the profile of pro-inflammatory cytokines (PIC) in mares classed either as resistant (RM) or susceptible (SM) to persistent post breeding endometritis (PPBE). SM had consistently higher endometrial mRNA transcription values for IL-1 β , IL-6 and TNF- α either during estrus or dioestrus. This was most pronounced after artificial insemination (AI), reflecting a possible role for proinflammatory cytokines in post-breeding endometritis. In addition, we have previously shown that injecting mares at breeding with a cell-wall extract from *Mycobacterium phlei* –MCWE–(Equimmune IV-Vetrepharm Inc.), reduced the post AI infiltration of polymorphonuclear leukocytes in endometrium of both RM and SM seen in estrus, as well as that of SM in dioestrus (**). As PIC are mainly produced by macrophages and MCWE modulates their activity, the aim of this study was to evaluate the influence of its application on an experimental setting of PPBE induced by AI. Eight RM and 8 SM were selected out of 2000 light cross type mares based on reproductive records, ability to become pregnant, and a uterine clearance assay with *Streptococcus zooepidemicus*. Two endometrial biopsies were taken during the same cycle, 1st: at 24h after treatment with 1.5 mg of MCWE and AI (with dead semen, when follicles >34 mm), 2nd: in diestrus (7 $\pm$ 1 days after ovulation) for PIC mRNA transcription determinations. Relative IL1- β , IL-6 and TNF- α mRNA expression in endometrial tissue between groups was quantitated using real-time PCR. Statistical analysis was done using Mann-Whitney's test by comparing medians between groups. Results showed that there were no significant differences in mRNA expression for any of the PIC evaluated between RM and SM either, after treatment with MCWE and AI or in dioestrus biopsies. According to these data, treatment with MCWE when AI, modulated inflammation in SM. In fact, immunomodulation appeared to revert the PIC pattern seen after AI in SM (*accompanying paper), making it similar to that presented by normal, RM. Thus, immunomodulation could be of help to improve breeding performances in mares with PPBE.

*Fumuso, E., et al., *IL1 β , IL6 and TNF α mRNA transcription studied by Real Time PCR in mares Resistant and Susceptible to persistent post breeding endometritis (PPBE). Present Congress*

**Fumuso, E.A., et al., *Effect of an immunomodulator in mares resistant and susceptible to endometritis Second Int. Conf. Exp. Clin. Reprod. Immunobiol., Amsterdam, November 15-18, 2000.*

Key Words: mares / endometritis / cytokines / real-time PCR / immunomodulation