THE INFLUENCE OF PGF2 ALPHA, OXYTOCIN AND ERGOMETRIN ON UTERINE MOTILITY IN THE COWS POST PARTUM

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It is known that the uterine contractility is regulated by humoral, vegetative and paracrine mechanisms.

Objective of the study was to investigate the influence of the investigated drugs on uterine electrical activity during the post partum period in cattle.

Material and methods: In the experiment 8 HF cows were used. EMG activity after application of PGF2α, oxytocin and ergometrin were recorded as described by Gajewski and Faundez, 1992. The following factors were used to analyze EMG activity: duration of the electrical activity bursts, myoelectrical index and the number of APB in a 10 min. period. Blood plasma P4 and E2 concentrations were analyzed using RIA.

Results: The uterus contractility was higher just after parturition then in the period to follow. In the first hours postpartum the uterine contractility was regular and high. After the placenta has been released the uterine motility decreased. Application of the investigated drugs increased the electrical activity of the myometrium in postpartum period. Duration of EMG, MI and number of APB increase in the early postpartum period. The application of oxytocin p.p. resulted in significant increases in uterine motility, frequency, amplitude and duration of the APBs. Application of PGF2α (Dynolitic) stimulated the uterus activity, characterized by the increase of duration of EMG and affecting both uterine horns and corpus uteri. The electrical activity of the uterus measured after ergometrin administration resulted in unequal reactions, either increase or no reaction in the total duration of electrical activity. In the first week post partum the level of P4 decreased from 0.7 ng/ml to undetectable amounts and the level of E2 fell from over 200 pg/ml on the day of parturition to 16.0 pg/ml on fifth day postpartum.

Conclusion: The results show that the use of Oxytocin, PGF2α and Ergometrin stimulate the EMG activity. The results of different parameters investigated, allow us to suggest that changes of EMG activity depend on hormonal levels (P4, E2), the postpartum period and the place of electrode implantation.

Keywords: EMG, uterus contractility, hormones