

EFFECT OF PEGYLATED GRANULOCYTE COLONY-STIMULATING FACTOR ON HEALTH OF MAMMARY GLAND IN DAIRY COWS

J. Tabery¹, M. Andrlíková¹, V. Bina², A. Lauschmannová¹, M. Mizeráková¹,
T. Páleník¹, V. Stařecká¹, K. Švédová¹, S. Čech¹
cechs@vfu.cz

¹University of Veterinary and Pharmaceutical Sciences Brno,
Faculty of Veterinary Medicine, Ruminant and Swine Clinic, Brno, Czech Republic

²University of Economics, Prague, Czech Republic

The granulocyte colony-stimulating factor (gCSF) from a family of glycoprotein cytokines stimulates the production of granulocytes and stem cells in the bone marrow. Their release into the bloodstream is the most important cellular defense against different pathogens. Pegylated granulocyte colony-stimulating factor (PEG-gCSF) has been shown to significantly increase the number of circulating neutrophils, level of phagocytosis, myeloperoxidase release and oxidative burst in dairy cows. Clinical effect of PEG-gCSF on occurrence of clinical mastitis during the first month postpartum as well as on disease severity, bacterial count or reduction of milk yield was reported. However, available studies are not numerous and confirmation of published results is necessary. The aim of the study was to evaluate the effect of PEG-gCSF on health of mammary gland postpartum in dairy cattle.

Cows in experimental group (n=119) were treated by PEG-gCSF (*Imrestor*, *Elanco*, treatment 7 days before expected parturition and 1 day after parturition s.c.). Cows in control group (n=125) remained without treatment. Incidence of clinical mastitis and subclinical mastitis was observed during 3 months postpartum. Bacteriological examination of milk was performed in 3rd and 8th week (1st sampling, 2nd sampling) postpartum in 55 cows from experimental and control group.

Incidence of clinical mastitis was 26.9 % and 21.6 % during 1 month postpartum, 31.1 % and 29.6 % during 2 months postpartum and 37 % and 33.6 % during 3 months postpartum in experimental and control group, respectively. Incidence of subclinical mastitis was 18.1 % and 18.8 % during 1 month postpartum, 32.8 % and 37.6 % during 2 months postpartum and 46.1 % and 56.4 % during 3 months postpartum in experimental and control group, respectively. Proportion of bacteriologically positive milk samples was 14.5 % and 16.4 % at 1st sampling, 10.9 % and 10.9 % at 2nd sampling and 23.6 % and 20 % at both samplings in experimental and control group, respectively. There were no significant differences between groups.

Results of the study did not confirm positive effects of PEG-gCSF on the occurrence of clinical and subclinical mastitis as well as on bacteriological findings in milk in dairy cows.

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