Serum amyloid A protein (SAA), haptoglobin (Hp) and selected hematological and biochemical parameters in wild mares before and after parturition

L. Krakowski¹, P. Bartoszek¹, I. Krakowska², P. Olcha³, T. Piech¹, A. Stachurska⁴, P. Brodzki¹

¹ Department of Andrology and Biotechnology, Chair and Clinic of Animal Reproduction, Faculty of Veterinary Medicine, University of Life Sciences, Głęboka 30, 20-612 Lublin, Poland
² University Center of Veterinary Medicine, Agricultural University of Cracow, Al. Mickiewicza 24/28, 30-059 Cracow, Poland
³ IIND Department of Gynecology, Medical University in Lublin, Jaczewskiego 8, 20-954 Lublin, Poland
⁴ Faculty of Biology and Animal Breeding, University of Life Sciences, Akademicka 13, 20-950 Lublin.

Abstract

The aim of the study was to evaluate physiological changes in hematological and biochemical parameters in mares in perinatal period. Blood samples were collected from 24 pregnant Polish Konik breed mares which were divided into two groups. The first group (Group – I, n=12) comprised mares living in the wild, in the reserve. The second group (Group – II, n=12) consisted of mares kept in stables. The blood was collected 2 weeks prior to the parturition, then 24 hours after the delivery, and then at the 7th and 21st day after foaling. When comparing the two groups before the parturition, no significant differences in terms of WBC, RBC, and Hb were found, however, there was a significant difference in MCV, MCH, LYM, NEU and SEG NEU (p ≤0.05). In Group II, 24 hours after the parturition and at the 21st day after foaling, a significant raise in WBC, NEU and SEG NEU (p≤0.05) was detected. No significant differences in serum concentrations of proteins such as TP, Alb or Glb were observed. As to acute phase proteins, significant rise in SAA and Hp (p≤0.05) was found in the two examined groups 24 hours after the parturition. Yet, this rise remained within physiological range. The study revealed a certain degree of fluctuations in hematological parameters, in serum concentrations of acute-phase proteins and total proteins in the mares in the perinatal period. However, these changes remained still within physiological ranges and thus they do not indicate potential susceptibility to disorders of perinatal period.

Key words: mare, pregnancy, acute phase response, hematology, biochemistry