

**COMPARATIVE ANALYSIS OF ANTIOXIDANT ACTIVITY AND REPRODUCTIVE  
HORMONES IN POSTPARTUM ANESTRUS COWS DIAGNOSED BY ULTRASOUND IN  
BASRAH PROVINCE**

Husamaldeen A. Alsalim 1

Theriogenology and Surgery Department, College of Veterinary Medicine, University of Basrah, Iraq

Mosa F. Abbas 2

Theriogenology and Surgery Department, College of Veterinary Medicine, University of Basrah, Iraq

Noor H. Sanad 3

Theriogenology and Surgery Department, College of Veterinary Medicine, University of Basrah, Iraq

Haider R. Abbas 4

Theriogenology and Surgery Department, College of Veterinary Medicine, University of Basrah, Iraq

Abstract

This study was conducted in Basrah province from September 2022 till December 2022 to evaluate the ratio of enzymatic antioxidants; catalase (CAT), superoxide dismutase (SOD), glutathione peroxidase (GSH-px), glutathione (GSH), and the concentration of malondialdehyde level (MDA) in the serum of 10 cows that suffered from postpartum anestrus compared five cyclic cows as a control group. In addition, a hormonal evaluation (Estrogen E2, progesterone P4, and cortisol) in postpartum anestrus cows compared regular control group. Postpartum anestrus and cyclic cows are diagnosed ultrasonographically by examining the genital tract per rectum using ultrasound. The results revealed a significant decrease ( $P < 0.05$ ) in all antioxidant enzymes (SOD, CAT, GSH-px) in postpartum anestrus cows in compared with to regular cyclic cows. The results of GSH analysis revealed that nonsignificant elevation occurred in postpartum anestrus cows compared to normal cyclic cows, and a significant increase ( $P < 0.05$ ) in the MDA level occurred in anestrus cows compared control group. The hormonal analysis showed a significant decrease ( $P < 0.05$ ) in both estrogen and progesterone with a significant elevation ( $P < 0.05$ ) for cortisol in anestrus cows compared to cyclic cows. The study concluded the postpartum anestrus cows were under oxidative stress, which plays an essential role in anestrus, especially after parturition..

Keywords: Enzymatic Antioxidant, Reproductive Hormones, Postpartum Anestrus.

<http://dx.doi.org/10.47832/2717-8234.17.21>

husamadeen.khalil@uobasrah.edu.iq

mosa.abbas@uobasrah.edu.iq

noor.hasan@uobasrah.edu.iq

haider.abbas@uobasrah.edu.iq