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SIGNIFICANCE OF OBSTETRIC AND GYNECOLOGICAL DISEASES IN THE DEVELOPMENT OF SUBCLINICAL AND CLINICAL MASTITIS IN COWS

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Abstract: This study investigated the significance of obstetric and gynecological diseases in the development of subclinical and clinical mastitis in cows kept on livestock farms and in household farms in Narpay and Pastdargom districts of Samarkand Region. A total of 516 cows underwent obstetric and gynecological examination. The results showed that endometritis was detected in 12.6% of the examined cows, retained placenta in 8.0%, subclinical mastitis in 14.2%, and clinical mastitis in 11.4%. The prevalence of mastitis was relatively higher in farms where reproductive disorders, particularly endometritis and retained placenta, were more frequently observed. The findings indicate an apparent association between postpartum obstetric and gynecological diseases and the occurrence of mastitis in cows. Timely diagnosis and treatment of postpartum reproductive disorders may therefore play an important role in the prevention of mastitis. Regular obstetric and gynecological examinations and early detection of subclinical mastitis using the NeoMast Test and California Mastitis Test (CMT) may contribute to maintaining milk production and reducing economic losses in dairy farming.

Keywords: catarrhal-purulent mastitis, endometritis, retained placenta, obstetric and gynecological diseases, subclinical mastitis, clinical mastitis, diagnosis, prevention.

Introduction. Under conditions of intensive development of dairy farming, maintaining the reproductive health of cows and controlling mammary gland diseases are important issues of both veterinary and economic significance. Obstetric and gynecological diseases occurring during the postpartum period, including endometritis and retained placenta, can adversely affect the physiological condition of animals and reduce their immunological resistance. These changes may increase the susceptibility of the mammary gland to pathogenic microorganisms and create favorable conditions for the development of mastitis.

Mastitis is one of the major diseases affecting dairy cattle and is associated with decreased milk production, deterioration of milk quality, increased treatment costs, and impaired reproductive performance. Catarrhal-purulent mastitis is of particular importance because of the considerable economic losses it may cause to livestock farms. However, the relationship between mastitis and obstetric and gynecological pathologies has not been sufficiently studied under the conditions of the Republic of Uzbekistan.

Therefore, determining the relationship between obstetric and gynecological diseases and mastitis in cows, assessing the prevalence of these diseases, and improving preventive measures are of considerable scientific and practical importance.



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Purpose of the research. The purpose of this study was to investigate the influence of obstetric and gynecological diseases, particularly endometritis and retained placenta, on the development of subclinical and clinical mastitis in cows kept on livestock farms and in household farms in Samarkand Region, and to assess the relationship between these diseases.

Material and methods: The study was conducted on cows kept at the “Tohir Yusuf Chorvasi,” “Agro Gold Spring,” “Khujaobod Chorvasi,” and “Khosil-Uboydulla-Bobur UAU” livestock farms located in Narpay and Pstdargom districts of Samarkand Region, as well as on cows kept in household farms.

A total of 516 cows of different ages, at different stages of lactation, and at different stages of pregnancy were selected for the study. Of these, 448 cows were kept on livestock farms and 68 cows were kept in household farms.

All cows underwent obstetric and gynecological examination to assess the clinical condition of the reproductive system. During the examination, the prevalence of postpartum diseases, including endometritis and retained placenta, was determined. For the diagnosis of mastitis, the general clinical condition of the cows, external appearance of the udder, palpation findings, and physical characteristics of the milk were evaluated. Subclinical mastitis was detected using the NeoMast Test, a new diagnostic test developed at the Veterinary Research Institute, and the California Mastitis Test (CMT).

Clinical mastitis was diagnosed based on local inflammatory changes in the udder, pathological changes in the milk, and the general clinical condition of the animal. The obtained data were summarized using Microsoft Excel. Disease prevalence was calculated as a percentage, and a comparative analysis was performed to assess the relationship between the prevalence of obstetric and gynecological diseases and mastitis.

Results and their analysis: The analysis by farm demonstrated differences in the prevalence of the diseases studied. At the “Tohir Yusuf Chorvasi” farm, 64 cows were examined. Endometritis was detected in 14.0%, retained placenta in 9.4%, subclinical mastitis in 15.6%, and clinical mastitis in 11.0% of the examined cows. In cows affected by mastitis, decreased appetite, redness and swelling of the udder quarters, and, in some cases, an increase in body temperature were observed (Table 1).

At the “Agro Gold Spring” farm, 216 cows were examined. The prevalence of endometritis was 11.0%, retained placenta 6.94%, subclinical mastitis 13.0%, and clinical mastitis 10.18%. The prevalence of mastitis was also relatively higher among cows diagnosed with reproductive disorders at this farm. At the “Khujaobod Chorvasi” farm in Pstdargom district, 93 cows were examined. Endometritis was detected in 13.0%, retained placenta in 8.6%, subclinical mastitis in 15.0%, and clinical mastitis in 12.9% of the cows. Clinical examination of affected animals revealed deterioration of the general condition, decreased response to external stimuli, reduced appetite, an increase in body temperature by an average of 0.6–0.9 °C above the physiological range, enlargement of the udder quarters, and pain upon palpation.

At the “Khosil-Uboydulla-Bobur UAU” farm, the prevalence of endometritis was 16.0%, retained placenta 10.67%, subclinical mastitis 17.3%, and clinical mastitis 12.0%.



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Among the studied farms, the highest prevalence of endometritis and mastitis was recorded at this farm. Among the 68 cows kept in household farms, endometritis was detected in 11.7%, retained placenta in 5.9%, subclinical mastitis in 11.7%, and clinical mastitis in 13.2%. These findings indicate that mastitis remains an important problem not only in large-scale livestock farms but also in the private household sector.

Table 1

Results of obstetric and gynecological examination of cows.

№	Farm name	Number of cows	Name of diseases							
			Endometritis		Retained placenta		Subclinical mastiti		Clinical mastitis	
			b/s	%	b/s	%	b/s	%	/s	%
1	Tohir Yusuf chorvasi	64	9	14	6	9,4	10	15,6	7	11
2	Agro gold spring	216	24	11	15	6,94	28	13	22	10,18
3	Xujaobod chorvasi	93	12	13	8	8.6	14	15	12	12,9
4	Xosil-Uboydulla-Bobur UAU	75	12	16	8	10,67	13	17,3	9	12
5	Cows kept in the care of the population	68	8	11,7	4	5,9	8	11,7	9	13,2
	Total	516	65	12,6	41	8	73	14,2	59	11,4

Among the 68 cows kept in household farms, endometritis was detected in 11.7%, retained placenta in 5.9%, subclinical mastitis in 11.7%, and clinical mastitis in 13.2%. These findings indicate that mastitis remains an important problem not only in large-scale livestock farms but also in the private household sector.

The results of the obstetric and gynecological examination showed that diseases of the reproductive system and mastitis are among the most common pathologies in the studied farms. Of the total number of 516 cows examined, endometritis was detected in 65 (12.6%), placental retention in 41 (8.0%), subclinical mastitis in 73 (14.2%), and clinical mastitis in 59 (11.4%).

The results obtained showed that there is a certain correlation between the incidence of diseases of the reproductive system and mastitis. In households with a high incidence of endometritis and placental retention, the incidence of subclinical and clinical mastitis was



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also relatively high. Specifically, at the "Khosil-Uboydulla-Bobur UAU" farm, endometritis was the highest at 16.0 percent, placental retention was 10.67 percent, and accordingly, mastitis was the highest at 29.3 percent.

This condition is explained by the fact that placental retention and postpartum uterine inflammation reduce the body's immunological resistance, as well as the weakening of the udder tissue response to infection as a result of the impact of inflammatory mediators and bacterial toxins on the mammary gland through the bloodstream. Therefore, the timely detection and treatment of endometritis and placental occlusion is an important preventive measure in the prevention of mastitis.

Conclusion: As a result of the conducted research, it was established that an increase in the incidence of subclinical and clinical mastitis is influenced by an increased number of cows with endometritis and delayed placenta in livestock farms and cows kept by the population of the Samarkand region. In households with a higher incidence of reproductive system diseases, the incidence of mastitis was also relatively high. The results of the study showed that the timely detection and treatment of postpartum obstetric and gynecological diseases are of great preventive importance in the prevention of mastitis. Therefore, regular obstetric and gynecological examination in livestock farms and early detection of subclinical mastitis using NeoMast Test and CMT tests are important factors in preserving milk productivity and reducing economic losses.

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