Analysis of the effectiveness of treatment of acute postpartum endometritis in cows

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Abstract. The aim of the study is to study the effectiveness of the traditional treatment regimen for acute postpartum endometritis in cows on a farm. The study was conducted in the dairy industry. The object of the study was cows of a red-mottled breed. A retrospective analysis of the spread of obstetric and gynecological diseases in cows was carried out. It was found that endometritis is most common – in 72.1–77.9% of the total number of sick animals. The dynamics of the incidence of cows with acute postpartum endometritis was studied, which amounted to: in 2019 – 16.4%, in 2020 – 15.3% of calved cows. To identify the therapeutic effectiveness of the traditional endometritis treatment regimen, a group of seven cows with signs of catarrhal purulent endometritis was formed. The therapeutic effectiveness of the traditional treatment regimen for acute endometritis in young cows with a single application ensures the clinical recovery of animals in 85.7% of cases. However, 28.6% of treated cows subsequently had a subclinical form of endometritis, which reduces the effectiveness of the applied scheme to 57.1% and contributes to a 7.7% prolongation of service life.

1 Introduction

The optimal level of reproduction of cattle, which allows to obtain maximum offspring and milk productivity, can only be ensured by the normal functioning of the organs of the reproductive system and other organs and systems of the animal body [1].

Currently, dairy cattle breeding captures a large part among all areas of animal husbandry, providing the population with products of animal origin [2].

In the production of livestock products, farm specialists have to face many problems that lead to a deterioration in the quality and a decrease in the quantity of these products. One of these problems is inflammation of the uterine mucosa in cattle [3].

The existing methods of reproduction of the breeding stock of cattle are the basis for obtaining high economic results in modern animal husbandry. Modern technologies of

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animal exploitation, their high level of dairy and meat productivity, poor environmental conditions, insufficient veterinary control, inadequate financial interest and other factors negatively affect the reproductive capabilities of breeding stock [4].

One of the constraining factors of the dynamic development of the industry is the high incidence of acute postpartum endometritis in cows and the imperfection of treatment methods used in practice [3].

According to N.I. Polyantsev, V.V. Podberezny, E.V. Ilyinsky, A.N. Turchenko, the incidence of cows with acute postpartum endometritis reaches 75-80% of the total number of cows with obstetric pathology of an inflammatory nature. In addition, many animals that have been ill with an acute form have complications in a subclinical form, due to impaired reproductive function, infertility is noted in 15-21% of cows and fertilization decreases by 50-70% [5].Uterine diseases not only negatively affect fertility, but also reduce the effectiveness of all types of productive animal husbandry. Inflammatory processes, especially in chronic form, create unfavorable conditions in the uterus for experiencing sperm (spermiolysins, spermiotoxins, bacteriotoxins and bacteriolysins appear, active forms of phagocytes, etc.); in addition, even after fertilization of the egg, the embryo trapped in the cavity of such a uterus dies [6].

Endometritis therapy requires an integrated approach and highly effective treatment regimens that guarantee the clinical recovery of animals by the end of the postpartum period, as well as fruitful insemination during the next 45-80 days after calving. At the present stage of animal husbandry development, the search and implementation of environmentally safe, cheap and highly effective methods and means of treating sick livestock is of particular relevance [7,8,9].

The aim of the study is to study the effectiveness of the traditional treatment regimen for acute postpartum endometritis in cows in dairy farming.

Tasks: to conduct a retrospective analysis of the spread of obstetric and gynecological diseases in dairy farming; to determine the degree of incidence of acute postpartum endometritis of cows on the farm; to determine the therapeutic effectiveness of the applied treatment regimen for acute endometritis in new-bodied cows.

2 Materials and Methods

The study was conducted on the basis of a dairy farm. The object of the study were cows of a red-mottled breed belonging to the farm. Research methods: analysis of documentation for 2019-2020; clinical and gynecological examination of cows (thermometry, rectal and vaginal examination).

3 Results and Discussion

Obstetric and gynecological diseases cause great economic damage, as they contribute to the development of infertility in animals. A retrospective analysis of the spread of obstetric and gynecological diseases among the livestock of cows in the dairy industry is presented in Table 1.

Table 1 Distribution of obstetric and gynecological pathologies

Year	Total number of cows, head.	Patients have been identified		Including					
				Detention of the afterbirth		Endometritis		Ovarian diseases	
		head.	%	head.	%	head.	%	head.	%
2019	610	154	25,2	32	20,8	111	72,1	11	7,1
2020	610	131	21,5	20	15,2	102	77,9	9	6,9

As the data in Table 1 show, the number of animals with obstetric and gynecological diseases in the farm amounted to 25.2% in 2019 and 21.5% in 2020 of the total number of cows. At the same time, endometritis is most common. Thus, in 2019, endometritis disease was noted in 111 animals, which is 72.1% of the total number of sick animals, and in 2020 – 102 animals, which is 77.9%.

Detention of the afterbirth was registered in 2019 in 32 heads, and in 2020 in 27 heads. cows, which is 5.6% lower compared to the previous year. Animals with signs of ovarian diseases accounted for 7.1% of the total number of sick animals in 2019, and in 2020 – 6.9%.

Table 2 Dynamics of the incidence of acute and chronic endometritis in cows

Year	Number of calved cows, head.	Number of cows with acute endometritis		Number of cows with chronic endometritis	
		head.	% of the number of calves	head.	% of the number of calves
2019	567	93	16,4	18	3,2
2020	602	92	15,3	10	1,7

An analysis of the data in Table 2 showed that during 2019, an acute form of endometritis was observed in 93 head of new-bodied cows, which is 16.4% of the calved cows. In 2020, the acute form was registered in 92 patients. cows, which, in turn, amounted to 15.3%. Chronic endometritis was registered in 2019 in 18 heads, and in 2020 in 10 heads, which is 3.2 and 1.7% of the number of calves, respectively. Thus, it can be concluded that the farm has seen a decrease in the incidence of cows with a chronic form of endometritis by 1.5%.

To identify the therapeutic effectiveness of the traditional endometritis treatment regimen, a group of 7 cows with signs of catarrhal purulent endometritis was formed.Cows were selected for the experimental group after a general clinical and gynecological examination. General depression, decreased appetite, and an increase in body temperature to 39.9-40.5 °C were observed in all experimental animals on the 5th–7th day after childbirth. Mucopurulent exudate with an unpleasant ichorous odor was observed from the external genitalia. The color of the exudate varied from light brown to yellow-brown. During rectal examination, an enlarged uterus was found, which was located in the abdominal cavity. The uterine wall is flabby, reacts poorly to massage. When massaging the uterus through the rectum, an increase in exudate was observed.

All identified sick cows were treated in the maternity ward. The farm uses a treatment regimen that uses the following drugs: iodopene, sticks with furazolidone "Furol", intrauterine sticks with ichthyol, vetbicin-3, eleovit. The scheme of use of the drugs is as follows:

– iodopene 1 supp., intrauterine, on the 1st, 3rd days of treatment;
– vetbicin-3-6 million units, intramuscularly, on the 1st, 3rd days of treatment;
– sticks with ichthyol 3 pcs., intrauterine, on the 2nd, 4th, 7th, 9th days of treatment;

– Furol sticks of 3 pcs., intrauterine, on the 2nd, 3rd, 6th, 8th days of treatment;
– eleovit – 8 ml, intramuscularly, on the 5th, 12th days of treatment;
– rectal massage 1 time a day, on the 3rd, 5th, 8th, 9th, 11th, 12th days of treatment.

According to the accepted scheme, treatment of cows with signs of postpartum catarrhal purulent endometritis is carried out within 12 days.

On the 12th day from the start of treatment, a rectal examination of all animals is performed in order to diagnose residual signs of endometritis. During rectal examination, the uterus and ovaries were simultaneously massaged. The results of treatment of cows are presented in Table 3.

Table 3 Results of treatment of animals of the experimental group

Animal's name, number	The outcome of treatment			Duration of the service period, days
	Clinical recovery	Repeated treatment	Signs of subclinical endometritis	
Chernomorka 7874	–	+	–	97
Bird 413	+	–	–	84
Morse code 6127	+	–	–	86
Clever girl 318	+	–	+	99
Milka 201	+	–	+	98
Sarin 654	+	–	–	87
Freckle 987	+	–	–	89
is the average value for the group, %	85,7	14,3	28,6	91±2,4

As the data in Table 3 show, the complete disappearance of visible clinical signs of acute postpartum endometritis after a course of treatment according to the traditional scheme was observed in 6 patients. cows, which is 85.7% of all animals treated.

In one animal, at the end of the therapeutic course (12th day of treatment), minor discharge of catarrhal purulent exudate from the genital slit was observed. During a vaginal examination using a vaginal mirror, it was found that the cervix of this cow was slightly open, and a mucous exudate with streaks of pus was observed at the bottom of the vagina. The mucous membrane of the vagina is slightly hyperemic. Therefore, this cow was immediately subjected to a second course of treatment according to the same scheme.

All cows of the experimental group were under the supervision of a veterinary specialist and an artificial insemination technician before fruitful insemination. I have 2 goals. The release of cloudy mucus with streaks of pus was recorded in cows during estrus. These cows were diagnosed with a subclinical form of endometritis and underwent sanitation of the uterine cavity.

In order to study the restoration of the reproductive ability of cows that have had an acute form of endometritis, the indicator of the duration of the service period was analyzed. The average length of the service period for the group was 91 days. However, it was found that the service period in cows (4 heads) who underwent treatment for acute endometritis once was shorter and varied in the range of 84-89 days and averaged 86.5 days. In cows that required repeated therapeutic manipulations for endometritis, the service period was higher than the average value for the group and ranged from 97 to 99 days. In cows undergoing repeated treatment of endometritis, the service period averaged 98 days, which is higher than the average for the group and in cows undergoing a single course of therapy by 7 and 11.5 days, respectively.

4 Conclusion

The incidence of various obstetric and gynecological diseases in cows ranged from 21.5 to 25.2%, with endometritis taking the leading place - 72.1–77.9% of the number of sick cows. The treatment regimen for acute endometritis used by the veterinary service of the farm, with a single application, gives clinical recovery of animals in 85.7% of cases. However, in 28.6% of cows treated, a subclinical form of endometritis was subsequently registered, which reduces the effectiveness of the applied scheme to 57.1% and contributes to an extension of the service period by 7.7%.

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