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**UPDATING THE TREATMENT METHOD OF THE FOLLICULAR
OVARIAN CYSTS IN COWS OF THE DAIRY PRODUCTIVITY
DIRECTION IN THE EAST-KAZAKHSTAN REGION**

Abstract. The article gives data on the use of releasing hormone for the treatment of follicular ovarian cysts of milk cows. Herewith, a comparison of two treatment options for follicular cysts using releasing hormone was carried out.

Treatment regimens consisted of injecting the gonadotropin-releasing hormone and prostaglandin F2 α drugs in various variants. For therapy of the sexual function of cows with follicular ovarian cysts, the drug Surfagon was used. As for the first regimen, from the day of finding a cyst formation in the ovary, the preparation was injected intravenously once for 3 days at a dose of 50 μ g with an ultrasound scan of the ovaries on the 4th day for the detecting a follicular cyst. According to the second regimen, the classical scheme of follicular cyst treatment was used based on a single intramuscular injection of releasing hormone (Surfagon) in the diagnosis of a follicular ovarian cyst at a dose of 50 μ g and prostaglandin F2 α injections on the 10-12 day and artificial insemination in the presence of estrus.

At the mean, of all the experimental groups during the first treatment regimen, recovery of ovulation and estrous cycle rhythm was recorded in 75.1% of animals, in the second treatment option - in 38.7% of animals. Cured animals on coming to the estrus were artificially inseminated with the sperm of bulls, tested on the quality of the offspring. 35 days after artificial insemination, the experimental animals underwent a rectal examination and ultrasound scan to determine pregnancy. In all groups of animals, fruitful insemination was on average 66.9% with the first treatment regimen and 53.5% with the second treatment regimen.

These results indicate a fairly high therapeutic efficacy of releasing hormone in the form of the Surfagon drug or its analogues when it is applied to cows with a follicular ovarian cyst during the period of manifestation of estrus or the formation of a new cyst. In terms of the share of cows that had recovered, the efficiency of the first regimen is 75.1%, of the fertilized animals - 66.9%.

Keywords: monitoring, releasing hormone, follicular cyst, treatment, cow.

Introduction. The decrease in fertility of cattle is associated with functional disorders of the reproductive organs that are often detected in animals, including ovarian dysfunction, manifested in the form of their hypofunction or cyst and inflammation of the uterine lining (endometritis). The problems associated with the reproduction of highly productive dairy cattle, especially the long period of the reproductive cycle, lactation dominant and the risk of infertility are among the acutest problems in dairy cattle breeding [1-3].

The onset of (follicular) cysts is caused by out-of-time or insufficient secretion of luteinizing hormone during the estrus due to the inability of the hypothalamic-pituitary system to respond adequately to estrogenic stimulation through positive feedback mechanisms. The consequences leading to excessive secretion of fluid in the follicles is a fairly common dys hormonal pathology, resulting in temporary infertility in most cases in dairy cows. Herewith, most cows recover without treatment in the period from

13 to 28 days, but in 35-40% of cases anovulatory cycles and cystic formations reappear. According to the results of our own research, functional disorder of the ovaries in the form of follicular cysts in high-milk herds is registered in up to 20% of the cows of the production department [4, 5].

At cyst formations in the ovaries, an active treatment policy is rational than waiting for self-healing, leading to a lengthening of the calving interval. At the same time, during rectal examination and detection of cyst signs, it is noted that 8-12 days after the establishment of the primary diagnosis, treatment is required only for 50% of previously diagnosed animals. In the opinion of some researchers, active identification and treatment of cows with cyst ovarian formations is recommended based on repeated confirmation of the diagnosis [6].

In view of these circumstances, a comprehensive study of this pathology is necessary, as well as the improvement of diagnostics and methods of treating cows with the ovarian cyst [7].

Materials and methods of research. The research work was carried out within the framework of the budget program upon the project “Development of effective breeding methods in the dairy cattle breeding industry”, for the event “Increasing the reproductive ability of dairy cows in the eastern region”, where the task was to study and improve restoration methods of the reproductive functions of dairy cows. The research work was conducted using the Simmental cows on the base farms of Kamyshinskoe and Zeitenov LLP of the East Kazakhstan region.

The state of the reproductive organs of cows was checked by rectal palpation and ultrasound diagnostics in order to determine the prevalence and risk factors for the development of cyst formations in the ovaries of experimental animals.

Treatment regimens consisted of injecting gonadotropin-releasing hormone and prostaglandin F2 α drugs in various variants. For correction of estrus of cows with follicular ovarian cysts, the Surfagon was used. At the first regimen, from the day of the finding a cyst formation in the ovary, the preparation was injected intravenously once for 3 days at a dose of 50 μ g with an ultrasound scanning of the ovaries on the 4th day for the presence of a follicular cyst. In cases of detection of cysts, mechanical extrusion was performed by rectal palpation. When mechanical extrusion was not possible due to the compacted wall and small volume, they were re-processed by the releasing hormone. If the cyst formation was successfully ruptured after 10–12 days, re-rectal palpation or ultrasound diagnostics of the ovary for the presence of cyst formation or corpus luteum was conducted. Cows with the corpus luteum in the ovary were injected with prostaglandin F2 α at a dose of 0.3 mg and in the presence of signs of estrus (48-72 hours), they were artificially inseminated. Animals come to the estrus within 10-12 days were immediately artificially inseminated.

According to the second regimen, the classical scheme of treatment of follicular cysts was used based on a single intramuscular injection of releasing hormone (Surfagon) at a dose of 50 μ g and injections of prostaglandin F2 α group drugs on the 10-12 day and artificial insemination in the presence of estrus [8].

In both cases, the effectiveness of insemination was taken into account, i.e. sperm dose consumption for 1 fruitful insemination, duration of treatment time and service period.

Research results. In the basic farms of Kamyshinskoe and Zeitenov LLP of the East-Kazakhstan region, animals with cystic pathology were selected and divided into 2 groups according to treatment regimens.

As can be seen from table 1, investigations on the use of releasing hormone in the treatment of follicular cysts were conducted on 53 cows of the Simmental breed in Zeitenov LLP, which was 10.6% of the 500 diagnosed cows, 34 Simmental cows in the Kamyshinskoe farm, which accounted for 13.6% of the 250 diagnosed cows. In each farm, cows with ovarian cysts were divided into two experimental groups for the treatment of follicular cysts using the releasing hormone in two different variants. The conditions for feeding and keeping animals in the experimental groups were similar.

Table 2 shows that in Zeitenov LLP in the first regimen, 23 animals were treated, 17 of which had an ovarian cyst, it amounted to 73.9%. As for the second treatment regimen, of 22 cows 8 animals had a cyst, which amounted to 36.3%. On the Kamyshinskoe farm, according to the first regimen, 17 animals were treated, 13 of which had a cystic formation, which accounted for 76.4%. According to the second treatment option, of 17 cows, a cyst was detected in 7 animals, which amounted to 41.1%. On average, of all the experimental groups in the first treatment regimen, recovery of ovulation and estrus rhythm was recorded in 75.1% of animals, in the second treatment option - in 38.7%.

Table 1 – Diagnosed cows with cystic pathology in the context of farms

No	Name of farm	Breed	Cows with cystic pathology	
			n	%
1	Zeitenov LLP, East-Kazakhstan region	Simmental	53	10.6
2	Kamyshinskoe farm, East-Kazakhstan region	Simmental	34	13.6

Table 2 – Results of the treatment of animals according to two regimens

No	Name of farm, Cow breed	Treatment regimen	Number of cows	The number of cured and artificially inseminated cows	
				n	%
1	Zeitenov LLP, Simmental breed	1	23	17	73.9
		2	22	8	36.3
2	Kamyshinskoe farm, Simmental breed	1	17	13	76.4
		2	17	7	41.1

Cured animals on coming to estrus were artificially inseminated with sperm of bulls, tested on the quality of the offspring. 35 days after artificial insemination, the experimental animals underwent a rectal examination and ultrasound scanning to determine pregnancy.

As can be seen from table 3, in the Zeitenov LLP, the pregnancy was detected in the first treatment regimen in 11 cows of total of 17 artificially inseminated animals, fruitful insemination amounted to 64.7%. According to the second option, of 8 cows 4 animals got pregnant, which amounted to 50% of fruitful insemination. On the Kamyshinskoe farm, according to the first treatment regimen, of 13 artificially inseminated cow 9 animals were pregnant, which accounted for 69.2% of fruitful insemination. According to the second regimen, of 7 cows 4 animals got pregnant, the fruitful insemination was 57.1%. In all groups of animals, fruitful insemination was on average 66.9% according to the first treatment regimen, and 53.5% according to the second treatment regimen.

The application of the first treatment option for cows with a follicular ovarian cyst ensured restoration of the estrus rhythm and fertility in most experimental animals. These results indicate a fairly high therapeutic efficacy of releasing hormone in the form of the drug Surfagon or its analogues when it is applied to cows with a follicular ovarian cyst during the period of manifestation of estrus signs or the formation of a new cyst. In terms of the shares of cows recovered, the efficiency of the first option is 75.1%, the share of the fertilized - 66.9%.

Highly synthetic GN-RH analogue of domestic production - Surfagon, administered to cows with follicular ovarian cysts intravenously at a dose of 50 µg, normalizes the functional activity of the gonads with the restoration of ovulation. With its differentiated three-time use (in the absence of the effect of previously conducted hormone therapy), under ultrasound control, recovery was observed in 75.1% of animals with a fertility rate of 66.9% compared to the classical treatment regimen based on a single injection of releasing hormone, where recovery was observed in 38.7% of cows with a fertility rate of 53.5%.

Table 3 – Results of artificial insemination of cows by two treatment regimens

No	Name of farm	Treatment regimen	The number of artificially inseminated cows	The number of pregnant cows	
				n	%
1	Zeitenov LLP	1	17	11	64.7
		2	8	4	50
2	Kamyshinskoe farm	1	13	9	69.2
		2	7	4	57.1

Conclusion. The solution of the tasks allowed to improve some technological aspects used in the reproduction of cattle. During the testing and development of estrus stimulation schemes for cows, new data were obtained, which expanded the possibility of reproduction management. Despite the achieved results, there is a need to improve and develop effective treatment regimens for follicular cysts.

The ground for doing research. Scientific and technical program of the Ministry of Agriculture of the Republic of Kazakhstan for 2018-2020. "Improving the efficiency of breeding methods in cattle breeding", project 3. "Development of effective breeding methods in the dairy cattle breeding industry", the event "Improving the reproductive ability of dairy cows in the eastern region"

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ШЫҒЫС ҚАЗАҚСТАН ОБЛЫСЫ ЖАҒДАЙЫНДА СҮТТІ БАҒЫТТАҒЫ СЫЫРЛАРДА АНАЛЫҚ БЕЗ ФУНКЦИЯСЫНЫҢ Фолликулярлық киста түрінде БҰЗЫЛУЫМЕН КҮРЕСУ ӘДІСІН ЖЕТІЛДІРУ

Аннотация. Мақалада сүт өнімділігі бағытындағы сиырлардың аналық бездерінің фолликулярлы кисталарын емдеуге арналған релизинг-гормонды пайдалану туралы деректер келтіріледі. Бұл ретте фолликулярлы кисталарды емдеудің екі нұсқасын релизинг-гормонды пайдалану арқылы салыстыру жүргізілді.

Емдеу схемалары гонадотропин релизинг-гормон және простагландин F2α тобының препараттары әртүрлі нұсқаларда инъекцияда болды. Аналық бездің фолликулярлық қылқаламымен сиырлардың жыныстық қызметін түзету үшін сурфагон препаратын қолданған. Бірінші нұсқа бойынша, аналық безде кистозды пайда болған күннен бастап препарат көктамыр ішіне бір рет 50 мкг дозада 3 күн бойы инъекцияланды, төртінші күні аналық бездерді фолликулярлы кистаның болуына ультрадыбыстық сканерлеу арқылы тексереді. Екінші нұсқа бойынша фолликулярлы кистаны емдеудің классикалық сызбасы қолданылды, бұл ретте, бұлшықет ішіне бір реттік инъекцияға негізделген релизинг-гормон (сурфагон) 50 мкг дозада аналық бездегі фолликулярлық кистаны диагностикалау және 10-12 күнге простагландин F2α тобының препараттарын инъекциялау және жыныстық даму болған жағдайда жасанды ұрықтандыру кезінде.

Орташа алғанда барлық тәжірибелі топтардың ішінен емдеудің бірінші нұсқасы бойынша, овуляция мен жыныстық циклдің ырғағын қалпына келтіру жануарлардың 75,1%-да, емдеудің екінші нұсқасы бойынша 38,7%-да тіркелді. Жыныстық аң аулауға келген жануарлар ұрпағының сапасы бойынша тексерілген бұқалардың ұрығымен қолдан ұрықтандырылды. Қолдан ұрықтандырылғаннан кейін 35 күн өткеннен кейін тұяқты жануарларға ұлттықты анықтау мақсатында ректалдық зерттеу және УДЗ жүргізілді. Жануарлардың барлық топтары бойынша нәтижелі ұрықтандыру орташа есеппен емдеудің бірінші нұсқасы бойынша 66,9 %, ал емдеудің екінші нұсқасы бойынша 53,5% болды.

Келтірілген нәтижелер "сурфагон" препараты немесе оның аналогтары түріндегі релизинг-гормонның жеткілікті жоғары терапиялық тиімділігі жыныстық аң аулау белгілерін манифестациялау немесе жаңа киста қалыптастыру кезеңінде аналық бездің фолликулярлы қылқаламымен сиырларды қолданғанда немесе оның аналогтары туралы куәландырады. Сауықтырылған сиыр үлесі бойынша бірінші нұсқаның тиімділігі 75,1 %, ұрықтандырылған 66,9% құрайды.

Түйін сөздер: мониторинг, релизинг-гормон, фолликулярлы киста, емдеу, сиыр.

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УСОВЕРШЕНСТВОВАНИЕ МЕТОДА БОРЬБЫ С РАССТРОЙСТВОМ ФУНКЦИЙ ЯИЧНИКОВ В ФОРМЕ Фолликулярной кисты у коров молочного направления ПРОДУКТИВНОСТИ В УСЛОВИЯХ ВОСТОЧНО-КАЗАХСТАНСКОЙ ОБЛАСТИ

Аннотация. В статье приводятся данные по использованию релизинг-гормона для лечения фолликулярных кист яичников коров молочного направления продуктивности. При этом было проведено сравнение двух вариантов лечения фолликулярных кист с использованием релизинг-гормона.

Схемы лечения заключались в инъекции гонадотропин релизинг-гормона и препаратов группы простагландин F2 α в различных вариантах. Для коррекции половой функции коровам с фолликулярными кистами яичников применяли препарат сурфагон. По первому варианту со дня обнаружения кистозного образования в яичнике препарат инъецировали внутривенно однократно в течение 3-х дней в дозе по 50 мкг. с ультразвуковым сканированием яичников на четвертый день на наличие фолликулярной кисты. По второму варианту использовали классическую схему лечения фолликулярных кист основанная на однократной внутримышечной инъекции релизинг-гормона (сурфагон) при диагностировании фолликулярной кисты в яичнике в дозе 50 мкг и инъекции препаратов группы простагландин F2 α на 10-12 день и искусственного осеменения при наличии половой охоты.

В среднем из всех опытных групп по первому варианту лечения, восстановление овуляции и ритма полового цикла зафиксировали у 75,1 % животных, по второму варианту лечения 38,7 %. Вылеченные животные по приходу в половую охоту были искусственно осеменены спермой быков, проверенных по качеству потомства. По истечению 35 дней после искусственного осеменения подопытным животным было проведено ректальное исследование и УЗИ с целью определения стельности. По всем группам животных плодотворное осеменение было в среднем по первому варианту лечения 66,9 %, а по второму варианту лечения 53,5 %.

Приведенные результаты свидетельствуют о достаточно высокой терапевтической эффективности релизинг-гормона в виде препарата «сурфагон» или же его аналогов при его применении коровам с фолликулярной кистой яичников в период манифестации признаков половой охоты или же формирования новой кисты. По доле выздоровевших коров эффективность первого варианта составляет 75,1 %, оплодотворившихся 66,9 %.

Ключевые слова: мониторинг, релизинг-гормон, фолликулярная киста, лечение, корова.

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