

MONITORING DISEASES OF THE GENITAL ORGANS OF FEMALE DOGS AS A RESULT OF THE USE OF HORMONAL CONTRACEPTIVES**M. G. KHOKHLOVA**, student of the Faculty of Veterinary Medicine**V. I. BORODYNIA**, Candidate of Veterinary Sciences, associate professor*National University of Life and Environmental Sciences of Ukraine*

E-mail: borodynia@gmail.com

<https://doi.org/10.31548/dopovidi2019.03.016>

Abstract. *The article highlights the results of a monitoring study of female genital organs as a result of the use of hormonal contraceptives that are used to prevent or stop laceration, to correct sexual intercourse, and to prevent unwanted pregnancy.*

The research was carried out during 2016-2018, on the basis of the clinic of veterinary medicine "Zoosvit", Vyshneve, vul. L. Ukrainka, 33-A, Kyiv region. The morbidity of the patients of the clinic for the research period as a whole and for each year of the study in particular was analyzed. The research determines the proportion of patients with obstetric and gynecological diseases of genital organs, separately gynecological diseases and separately gynecological diseases after the use of hormonal contraceptives, from the total number of patients in the clinic. Thus, analytical data on the influence of these drugs on the state of genital organs of females were obtained. Consequently, genital organs disease due to the use of hormonal contraceptives is 25,5% of the total number of patients in the clinic, 25,9% of the total number of animals with obstetric and gynecological pathology together, 44,3% of the number of animals with gynecological diseases during the trial period. The largest number of patients with genital diseases due to the use of hormonal contraceptives to the clinic applied in 2017 – 34,7% of the total number of such animals for the entire study period. In the vast majority of cases there was a complication in the form of a pyometra – 71,6%.

Key words: *dogs, bitches, hormonal contraceptives, genital organs, disease, reproductive ability, monitoring*

Introduction. The issue of preserving the reproductive capacity of females and, therefore, preventing the emergence of various types of gynecological pathology of reproductive organs is a very topical issue, since for regulating the sexual cycle, preventing unwanted pregnancy, correcting the sexual behavior of an animal and for the convenience of dog

owners, they now use hormonal contraceptives massively. On the other hand, uncontrolled, non-professional application of such drugs leads to undesirable effects that manifest themselves as an increase in genital diseases, the elimination of which requires the implementation of radical surgical therapy, the consequence of which is often a complete loss of

Хохлова М. Г., Бородиня В. І.

fertility, and in some cases, may endanger the life of the animal.

Analysis of recent research and publications. As you know, the conservative method of contraception in animals is the use of synthetic hormonal high-level drugs. They can be oral and injectable. The first ones are available for sale in any pet store or veterinary pharmacy and are intended for a wide, but consequently often uncontrolled, use of pet owners. The second, as a rule, is used only in clinics of veterinary medicine after consultation of the physician, taking into account the body weight of the animal and the stages of the sexual cycle [6, 10, 12].

In order to understand the mechanism of action of hormonal contraceptives, it is necessary to know that the sexual cycle in females has a long duration (from 3 to 6 months) and manifests itself usually twice a year. It begins with general excitement a gon, which, depending on the season of the year, living conditions, breed and fattening of the animal, can last 8-14 days or more. For the characterization of the sexual cycle, females usually use the classification according to V. Hip [5].

Female sex hormones are divided into follicular estrogen hormones or estrogens (estradiol, estriol, estrone) and gestagens, the hormone of the yellow body (progesterone, placental progesterone) [2]. The influence of estrogens and progesterone on female genital organs is both synergistic and

antagonistic. On the one hand, progesterone acts on the uterine mucus only after the preparatory effect of estrogen, on the other hand, it suppresses uterine contractions, whereas estrogens stimulate them [1].

The synthetic analogue of progesterone is proligestone, it has the ability to inhibit the secretion of luteinizing (LH) and follicle-stimulating (FSH) hormones, which are produced by the anterior lobe of the pituitary gland. Drugs with progesterone suppress the synthesis of estradiol by the follicles of the ovaries, which prevents the development of morphological and psychophysiological changes in females related to the sexual cycle (prevents the development of the ovary). Proligeston changes the physico-chemical properties of mucus in the uterus, suppresses the proliferation of endometrium and breast mammary glands. When these medications are administered during the period of sexual rest (anestrus), prolighgestone maintains a low level of LH, resulting in a process of ovulation becoming impossible. Proligeston is deposited in adipose tissue and recirculates in the liver of the animal, with which the long-term effect of the drug is associated [13].

The hormone of the yellow body and its synthetic substitutes have recently been widely used to shorten the severely expressed liver, prevent spontaneous abortions, and synchronize hunting [7].

The decrease in the level of these hormones in the blood of animals leads to a violation of folliculogenesis in females, which provides an anti-estrogenic and anti-ovulatory action on the gonads, resulting in delayed, a laceration is interrupted and sexual disturbances appear [8, 11].

It should also be noted that for females, the dose of the hormonal drug is selected individually, depending on the weight of the body, using the instructions. Hormonal contraceptives are undesirable for females before the first estrus and in the later stages of the proestrus. The probability of side effects is significantly increased in cases where other analogues of progesterone have been used [12]. One of the side effects after the use of hormonal contraceptives to detain or suppress the lobes may be the emergence of an iatrogenic pyometer [4, 5].

The purpose of the study is to determine the relationship between uncontrolled use of hormonal contraceptives for dogs used to prevent or stop the lung, correction of sexual behavior, and prevention of unwanted pregnancy, with subsequent pathologies of genital organs in females.

Methods. Monitoring studies to determine the effect of hormonal contraceptives on the state of genital organs of dogs were carried out during 2016-2018, based on the clinic of veterinary medicine "Zoosvit",

Vyshneve, st. L. Ukrainka, 33-A, Kyiv region.

For this purpose, the total number of dogs whose owners contacted the clinic during the trial period were determined. Then they determined the absolute and relative indicators of the number of patients with obstetric and gynecological diseases together and separately similar figures for the number of animals only with gynecological. And finally indicators of the number of patients in the clinic, with gynecological pathology, which in the history used hormonal contraceptives. In addition to setting the level of disease of females for the research period, similar indicators were determined separately for each year of the trial period. Also, the types of gynecological pathology that were diagnosed in the named patients for the research period as a whole and separately for each year of the study due to the use of hormonal contraceptives were determined. For this purpose, logbooks and medical cards of patients from the clinic of veterinary medicine for 2016-2018 were worked out.

For the research used: clinical to determine the clinical status of dogs with diseases of the genital organs; laboratory: bacteriological to determine the species composition of the microflora and sensitivity to antibiotics, hematological to study the morphological picture of blood, to determine its physical and chemical properties in dogs with pathology of the

Хохлова М. Г., Бородиня В. І.

genital organs; statistical for processing of digital indicators, obtained as a result of research.

Results. As a result of a monitoring study conducted on the basis of the zoology clinic in the period 2016-2018, we found that only 626 dog

owners turned to this institution for qualified assistance, regardless of the type of pathology. So, in 2016, the total number of patients bitch was 189, in 2017 – 234, in 2018 – 203 animals. The results are shown in Table 1.

1. Indicators of the number of dogs patients of the clinic in the period of 2016-2018

	Years old						For the entire period	
	2016		2017		2018			
	n	%	n	%	n	%	n	%
Number of animals	189	30,2	234	37,4	203	32,4	636	100

From the data presented in Table 1, we can conclude that in the clinic of veterinary medicine in 2017, the total number of female female, regardless of the type of pathology was the largest and was 37.4%, the smallest in 2016 – 30.2%. According to our research, the total number of sick dogs during the study period did not have a certain tendency to increase or decrease.

Results of determination of absolute and relative indicators of the number of female patients of a clinic with various diseases of the genitalia (obstetric and gynecological pathology) from the total number of dogs for the period 2016-2018 and for each year separately are given in Table 2.

2. Indicators of the number of dogs patients of the clinic with obstetric and gynecological pathology in the period of 2016-2018

Types of pathology	Years old						For the entire period	
	2016		2017		2018			
	n	%	n	%	n	%	n	%
obstetrician	78	30,0	93	35,8	89	34,2	260	100
gynecological	111	30,3	141	38,5	114	31,2	366	100
Together	189	30,2	234	37,4	203	32,4	626	100

According to the data presented in Table 2, the number of sick dogs with obstetric and gynecological diseases together was the largest in 2017 and amounted to 37.4%. During the period 2016-2018, the proportion of these

animals from the total number of dogs, patients of the clinic during this period was 98.4%.

The results of the determination of absolute and relative indicators of the number of females suffering from

Хохлова М. Г., Бородиня В. І.

gynecological diseases as a result of the use of hormonal contraceptives whose owners turned to the clinic for

assistance in 2016-2018 as a whole and for each research year are given in Table 3.

3. Indicators of the number of dogs patients of the clinic with gynecological diseases after the use of hormonal contraceptives in the period of 2016-2018

	Years old						For the entire period	
	2016		2017		2018			
	n	%	n	%	n	%	n	%
Number of animals	47	29	62	38,3	53	32,7	162	100

According to the data presented in Table 3, the absolute and relative indicators of the number of patients with gynecological diseases of female genital organs, as a complication, due to the use of hormonal contraceptives in order to correct sexual behavior, did not have a stable tendency to increase during the trial period. At the same time, it should be noted that the highest figures in 2017 were 62 animals, which was 38.3%.

The proportion of women with gynecological diseases due to the use of hormonal contraceptives from the total number of dogs with gynecological diseases during the study period was 44.3%, of the total number of female with various reproductive organs diseases 25.9%, and from the total number of patients in the clinic 25.5%.

The results of the processing of registration logs and medical cards of patients of the clinic of veterinary medicine for 2016-2018, their research,

analysis of data of clinical and laboratory research, made it possible to determine the types of gynecological pathology diagnosed in the named patients for the research period as a whole and separately for each year of the study due to the use of hormonal contraceptives and to determine the absolute and relative indicators of their frequency of occurrence. The above data is given in Table 4.

According to the data presented in Table 4, it can be concluded that the main types of pathologies of the genital organs of bitch that arose from the use of hormonal contraceptives were a pyometer – 71.6%, oncological pathology of the uterus – 17.3%, ovarian cysts – 11, 1%. Consequently, the use of these drugs in the vast majority of cases had little complication in the form of a pyometra.

4. Types of gynecological pathology in females after the use of hormonal contraceptives in the period of 2016-2018

Years old	Total number of sick animals	Types of pathology					
		Pyometra		Ovarian cysts		Oncological pathology of the uterus	
		n	%	n	%	n	%
2016	47	35	30,2	6	33,3	6	21,4
2017	62	45	38,8	8	44,5	9	32,2
2018	53	36	31,0	4	22,2	13	46,4
Total	162	116	100	18	100	28	100
% of the total			71,6		11,1		17,3

Discussion. Taking into account the results of a monitoring study conducted on the basis of the clinic of veterinary medicine, the use of hormonal contraceptives for the prevention or cessation of lung, prevention of unwanted pregnancy and correction of female sexual behavior led to an increase in the number of animals with different types of gynecological pathology. In the vast majority of cases

there was a complication in the form of a pyometer.

Further studies to find out the effect of hormonal contraceptives on the state of the genital organs, will be aimed at determining the relationship with the occurrence of pathology reproductive organs of the female taking into account the breed of the animal, its age, body weight, season of the year.

References

1. Allen V. E. Polnyy kurs akusherstva i ginekologii sobak. Kyiv : Akvarium, 2005. P. 126–164.
2. Allen V. E. Polnyy kurs akusherstva i ginekologii sobak. Kyiv : Akvarium, 2002. P. 430–448.
3. Andreyev I. D. Atlas operativnoy khirurgii dlya veterinarov. Kyiv : G·EOTAR-Media, 2009. P. 58–61.
4. Astrakhantsev V. I., Danilov E. P., Dubnitskiy A. A. Bolezni sobak. Kyiv : Kolos, 1970. P. 200–204.
5. Veterynarne akusherstvo, hinekologhiia ta biotekhnologhiia vidtvorennia tvaryn z osnovamy

androlohii. / za red. V. A. Yablonskoho. Vinnytsia : Nova Knyha, 2011. 608 p.

6. Glebova I. N. Bolezni sobak. Kyiv : Akvarium-Print, 2011. P. 875–878, 458–459.

7. Glikina E. G. Bolezni sobak i ikh lecheniye. Kyiv : AST, 2008. P. 59–78.

8. Ingland G. Akusherstvo i ginekologiya sobak. Kyiv : Akvarium-Print, 2012. P. 121–134.

9. Nimand KH. G., Suter P. F. Bolezni sobak. Prakticheskoye rukovodstvo dlya veterinarnykh vrachey. Kyiv : Akvarium-Print, 2008. P. 536–540.

Хохлова М. Г., Бородиня В. І.

10. Simpson Dzh. Pukovodstvo po peppoduktologii i neonatologii sobak i koshek. Kyiv : Cofion, 2005. 280 p.

11. Stekol'nikov A. A., Vasil'yev R. M., Golovacheva N. V. Bolezni sobak i koshek. Kompleksnaya diagnostika i terapiya. Uchebnoye posobiye. Kyiv : SpetsLit, 2013. S. 259–261.

12. Tilli L., Smit F. Bolezni koshek i sobak. Spravochnik. Kyiv : G·EOTAR-Media, 2010. S. 221–222, 374–378.

13. Fedyuk V. I. Spravochnik po boleznyam sobak i koshek. Kyiv : Feniks, 2000. S. 87–89, 158–163.

14. CHandler Dzh. Fiziologiya zhivotnykh. Kyiv : Akvarium, 2007. 45 s.

МОНИТОРИНГ ЗАБОЛЕВАНИЯ ПОЛОВЫХ ОРГАНОВ СУК В РЕЗУЛЬТАТЕ ПРИМЕНЕНИЯ ГОРМОНАЛЬНЫХ КОНТРАЦЕПТИВОВ М. Г. Хохлова, В. И. Бородиня

Аннотация. В статье освещены результаты мониторингового исследования заболевания половых органов сук вследствие применения гормональных контрацептивов, для предотвращения или прекращения течки, коррекции полового поведения, и предупреждения нежелательной беременности.

Исследования проводились в течение 2016-2018 гг., на базе клиники ветеринарной медицины «Зоосвит» г. Вишневое, ул. Л. Украинки, 33-А, Киевской области. Была проанализирована заболеваемость сук – пациентов клиники за период исследований в целом и за каждый год исследования в частности. Исследованиями определена доля пациентов с акушерскими и гинекологическими заболеваниями половых органов, отдельно гинекологическими заболеваниями и отдельно гинекологическими заболеваниями после применения гормональных контрацептивов, от общего количества пациентов клиники. Таким образом были получены аналитические данные о влиянии этих препаратов на состояние половых органов сук. Итак, заболевания половых органов сук результате применения гормональных контрацептивов составили 25,5 % от общего количества пациентов клиники, 25,9 % от общего количества животных с акушерской и гинекологической патологией вместе. 44,3 % от числа животных с гинекологическими заболеваниями за исследовательский период. Больше всего пациентов с заболеваниями половых органов в результате применения гормональных контрацептивов в клинику обратилось в 2017 году - 37,4 % от общего количества таких животных за весь период исследования. В подавляющем большинстве случаев имело место осложнение в виде пиометры - 71,6 %.

Ключевые слова: собаки, суки, гормональные контрацептивы, половые органы, заболевания, воспроизводящая способность, мониторинг

**МОНІТОРИНГ ЗАХВОРЮВАННЯ СТАТЕВИХ ОРГАНІВ СУК
ВНАСЛІДОК ЗАСТОСУВАННЯ ГОРМОНАЛЬНИХ КОНТРАЦЕПТИВІВ****М. Г. Хохлова, В. І. Бородиня**

***Анотація.** У статті висвітлені результати моніторингового дослідження захворювання статевих органів сук внаслідок застосування гормональних контрацептивів для запобігання або припинення тічки, попередження небажаної вагітності та корекції статевої поведінки тварини.*

Дослідження проводили впродовж 2016–2018 рр., на базі клініки ветеринарної медицини «Зоосвіт» м. Вишневе, вул. Л. Українки, 33-А, Київської області. У статті проаналізована захворюваність пацієнтів клініки за дослідний період у цілому і за кожен рік дослідження зокрема. Дослідженнями визначена частка пацієнтів сук, хворих акушерськими і гінекологічними захворюваннями статевих органів, окремо гінекологічними захворюваннями та окремо гінекологічними захворюваннями після застосування гормональних контрацептивів, від загальної кількості пацієнтів клініки. Таким чином були одержані аналітичні дані щодо впливу зазначених препаратів на стан статевих органів сук. Отже, захворювання статевих органів внаслідок застосування гормональних контрацептивів становить 25,5 % від загальної кількості сук – пацієнтів клініки, 25,9 % від загальної кількості з акушерською і гінекологічною патологією разом, 44,3 % від числа тварин з гінекологічними захворюваннями за дослідний період. Найбільше пацієнтів із захворюваннями статевих органів внаслідок застосування гормональних контрацептивів до клініки звернулося у 2017 році – 37,4 % від загальної кількості таких тварин за весь період дослідження. У переважній більшості випадків мало місце ускладнення у вигляді піометри – 71,6 %.

***Ключові слова:** собаки, суки, гормональні контрацептиви, статеві органи, захворювання, відтворювальна здатність, моніторинг*