Clinical use of Aglepristine for treatment of open-cervix pyometra in cats

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The results of the clinical application of the integrated therapy of cats having an open-cervix of the pyometra are presented in this work. It has been proved that pathology affects mostly the animals in the age from 3 to 8 years. In the clinical study, it was found that in the open-cervix of the pyometra cats had also depression, anorexia, polydipsia, polyuria, increase in the abdomen, withdrawal of the purulent exudate from the vagina.

In micropreparations taken from the vaginal mucosa, an increase in the number of neutrophilic granulocytes was observed, most of them with signs of apoptosis. Significant changes in functional reactivity of phagocytic cells were found. Using microbiological researches the polymicrobial association of pathogenic microorganisms have been identified in the exudate. Hematologic studies have shown decrease of hemoglobin content and signs of neutrophilic leukocytosis. In ultrasonography, patients with pyometra showed an increase in the body and horns of the uterus, which were stretched with accumulated fluid, thickening of the organ’s wall, and a clear picture of the cystic endometrial hyperplasia of the endometrium was visualized.

The research has tested a treatment regimen with the use of Aglepristine (Alizin® Virbac, France) in combination with Mastometrin and antibiotic therapy (Amoscillin 15%, INVESA, Spain). During the treatment the fever, vomiting and polydipsia have disappeared, the appetite had restored. Laboratory studies have established a dynamic reduction in the number of leukocytes and fading reactive neutrophilia. The ultrasound has noted decreased diameter of the uterus. Major hematological and immunological parameters of homeostasis were normalized.

The obtained clinical studies indicate that the complex scheme of therapy of cats for the open-cervix of the pyometra contributes to the restoration of the functional state of the uterus, the extinction of the pathological process and the normalization of the functions of all organs and systems.

Key words: cats, reproductive system, pyometra, diagnosis, therapy, Aglepristine (Alizin®, Virbac), clinical approbation of the treatment scheme.

Клінічне застосування аглепрістону в схемі лікування кішок за відкритої форми піометри

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У роботі наведені результати клінічного застосування комплексної терапії кішок за відкритої форми піометри. Встановлено, що патологія переважно уражає тварин від 3-х до 8-ми років. При клінічному дослідженні було встановлено, що відкрита форма піометри у кішок провоциється загальним присніченням, втратою апетиту, спрагою, частим сечовиділенням, збільшенням черева, виділенням з піхви слизово-гнійного ексудату.

В мікропрепаратах, відібраних з слизової піхви виявлено зростання кількості патогенних мікроорганізмів, більшість із яких мали ознаки апоптозу. Відзначали також зміни функціональної реактивності фагоцитарних клітин. Мікробіологі-
Pathologies of cats characterized by cystic endometrial pyometra. Nowadays, the main method of treating pain response and vaginal discharge (open-cervix operation (ovariogysterectomy) (Davidson and Black, 2015; Shah et al., 2016). Despite this, in foreign literary sources, cases of successful use of conservative treatment methods are increasingly being reported. Thus, one of the effective therapeutic regimens for bitch and cats for open pyometra is the use of natural (or synthetic) prostaglandin F2α, the mechanism of action of which is based on interaction with plasma mimic receptors of myometrium, the enhancement of contractile function of the uterus, and the withdrawal of accumulated exudate. Luteolysis also occurs under the action of the drug, which in its turn reduces the concentration of progesterone in the body, inhibiting the development of the pathological process in the uterus (Silva et al., 2010; Hagman et al., 2011).

Currently, the arsenal of practitioners is replenished with drugs of the new pharmacological group, such as Aglepristone, that is the progesterone receptor inhibitor in inhibiting the development of the pathological process in the uterus. In modern overseas sources, information is used in cynics, complex schemes of treatment cats, to which is added a scheme of functional state of the womb, normalization of functional process and normalization of function of all organs and systems.

Key words: cats, reproductive system, symptoms, diagnosis, scheme of lysis, Aglepristone (Alizin®, Virbac), clinical application scheme of therapy.

Introduction

Pyometra is one of the most common reproductive pathologies of cats characterized by cystic endometrial hyperplasia, which occurs on the background of hormonal shifts and the development of the septic process. Cats of all breeds and age groups are susceptible to the disease. The statistics convincingly show that pathology occurs due to hormonal imbalances in the body of animals and is the result of uncontrolled and inappropriate use of progestogen preparations (Verstegen et al., 2008; Pratschke, 2015).

The clinical systematics of the pyometra is variable, and is mainly manifested by depression, anorexia, increased polydipsia, polyuria, abdominal enlargement, pain response and vaginal discharge (open-cervix pyometra). Nowadays, the main method of treating animals with closed pyometra is to carry out a surgical operation (ovariogysterectomy) (Davidson and Black, 2015; Shah et al., 2016).
available on the clinical use of Aglepristone for the treatment of animals with an open-cervix of pyometra; however, the complexity of the treatment of small pets having pyometra is presented only fragmentally (Küplüü et al., 2011; Hagman et al., 2011; Ros et al., 2015). Therefore, the purpose of our work was to approbate a comprehensive scheme of cats therapy having an open-cervix of the pyometra with the use of Aglepristone (Alizin® Virbac, France).

**Material and methods**

Clinical and experimental studies were performed on clinically healthy cats (control group, n = 14) and on sick animals (experimental group, n = 14) having an open-cervix of the pyometra. Animal groups were formed in accordance with the principles of group-based analogies, taking into account the breed, age and body weight, and the stage of development of the pyometra. All studies were conducted in accordance with the Law of Ukraine «On Protection of Animals from Cruel Treatment» (No. 3447-IV of February 21, 2006) and the current requirements of the European Commission for treating vertebrate animals and protecting them from polydipsia, hunger, malnutrition, discomfort, fear, pain and illnesses. Diagnosis of the pyometra was based on anamnesis, clinical signs, serial laboratory (cytologic, microbiologic, hematologic, immunological (Zhelavskij et al., 2017) and ultrasonographic studies (Mindray Z6 Vet).

The treatment was based on the principle of complexity. Patients received injections of Aglepristone (Alizin® Virbac, France) at a dose of 10 mg/kg SC body weight, once a day (scheme 1, 2, 7, 14 days of treatment) in combination with the preparation of Mastometrin (Alexan LLC, Russia) at a dose of 0.5 ml/kg body weight, 2 times a day, and an antibiotic Amosocillin 15% (INVESA, Spain) at a dose of 15 mg / kg body weight at 48 hours intervals. Therapeutic efficacy was evaluated according to the clinical criteria of the physic status of animals, the results of laboratory and ultrasonographic studies.

**Results and discussion**

According to the statistics of veterinary reporting, it is found that in the Kamyanets-Podilsky and Khmelnytskyi the pyometra is mostly found in cats at the age from 3 to 8 years. In the treatment history of 8 animals, the use of progestogen preparations was established. Signs of the disease manifested in the metestrus. In a detailed clinical study, it was found that in the open-cervix of the pyometra in cats, the disease appeared with depression, anorasia, polydipsia, purified urine, increased abdominal pain, discharge from the vagina yellowish or greenish with a specific smell of mucous-purulent exudate. In animals, pathology was also manifested by vomiting and the development of subfebrile fever. In two patients, concomitant illness complicated by glomerulonephritis.

In micropreparations selected from the vaginal content, signs of neutrophilic granulocytes were observed, most of them with signs of apoptosis. Changes in functional reactivity of phagocytic cells were noted (Zhelavskij and Shunin, 2017; Zhelavskiy and Shunin, 2017). Among the cellular elements, a significant number of coccus and sticky forms of microorganisms were detected. Microbiological studies in the exudate have identified the polymicrobial association (mainly in isolates dominated by pathogenic strains of E. coli, Staphylococcus spp., Streptococcus spp., etc.). An antibioticogram was determined in a specialized laboratory and the antibiotic susceptibility of isolated microflora to amoxocillin was established. Hematologic studies have shown decrease of hemoglobin content, signs of neutrophilic leukocytosis.

In an ultrasonographic study of patients with a pyometra, an increase in the body and horns of the uterus, which was extended by accumulated fluid (anechoic visualization), thickening of the organ wall (mainly due to the endometrium) was found and a clear pattern of cystic endometrial hyperplasia of the was visualized.

In the dynamics of treatment in animals of the experimental group, for 2–3 days, intensive excretion of the exudate was noted. Fever, vomiting and polydipsia have disappeared, appetite has restored. Laboratory studies have established a dynamic decrease in the number of leukocytes and fading reactive neutrophilia. Ultrasound study has noted a decrease in the size of the uterus. After 12–14 days of treatment the exudative reaction ceased completely, the general condition and appetite were normalized, main hematological and immunological parameters of homeostasis were restored.

**Conclusion**

The cat's pyometra is a polyoid etiology of reproductive organs that occurs in animals of different age groups (from 3 to 8) and occurs as a result of a hormonal imbalance characterized by cystoid hyperplasia of the endometrium and the development of the inflammatory process involving the polymicrobial strains. For the treatment of cats in the open-cervix of the pyometra, it is recommended to combine the therapy with the use of Aglepristone (Alizin® Virbac, France) at a dose of 10 mg/kg body weight SC, once a day (scheme 1, 2, 7, 14 days of treatment), in combination with Mastometrin (Alexan LLC, Russia) at a dose of 0.5 ml/kg body weight, 2 times a day, and an antibiotic Amosocillin 15% (INVESA, Spain) at a dose of 15 mg/kg body weight at 48 hours intervals. The proposed scheme contributes to the restoration of the functional state of the uterus, the extinction of the pathological process and the normalization of the functions of all organs and systems.

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