INTRODUCTION
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Over the last two decades there has been a tremendous increase in the number of pedigree dogs particularly in the urban areas with the kennel owners even importing fancy breeds, at an exorbitant price. Consequently, canine breeding has become highly commercialized and lucrative. The kennel owners and dog lovers have become increasingly aware of gynaeco pathological problems affecting the female dogs apart from mismating.

Reproductive diseases play a big role in canine infertility. Uterine problems are the most common cause of failure to conceive. Hagman (2004) reported 25% of the female dog population developed pyometra by 10 years of age, which is very high incidence rate compared to other uterine problems.

Pyometra is a common metoestral disease of intact adult bitches (Dow, 1959). It is characterized by uterine bacterial infection with pus accumulating in the uterus and systemic illness. Several terms, such as chronic endometritis, chronic purulent metritis or cystic endometrial hyperplasia - pyometra complex, have been used in the literature to describe the condition (Fakuda, 2001). The disease is associated with a variety of clinical symptoms and is life-threatening in severe cases.

The exact etiology of the pyometra is still unknown. In the initial phase of the disease process, the stimulation of the uterus by endogenous or exogenous gestagens over an extended period seems to play an important role. A canine uterus under the influence of progesterone is susceptible to bacterial infections, as progesterone stimulates the
growth of the endometrial glands and their secretory activity, along with cervical closure and the suppression of myometrial contractions (Noakes et al. 2001). In addition, gestagens have an inhibitory effect on the leucocytic activity in the uterus, adding support to a bacterial infection. As progesterone is already dominant during the oestrus phase when the cervix is still open, there is an increased risk for an ascending bacterial infection, *Escherichia coli* are the bacteria which are most often isolated, in up to 90% of cases. The preferred method in establishing the diagnosis is ultrasonography (Uckmak and Cagatay 2008).

Historically, pyometra has been most commonly treated by ovariohysterectomy (OHE), once the bitch has been adequately stabilized. This remains the recommended treatment in all cases for bitches without significant reproductive value, or when the owner has no strong desire to breed the bitch. Due to the insidious nature of the disease and its sometimes equivocal clinical signs, patients are often presented in poor condition for anesthesia and surgery.

During the last 10–15 years, other conservative strategies have been developed. Pharmacological treatment carries an important role in cases of valuable breeding bitches in order to protect their breeding potential. Furthermore, surgical treatment carries a risk and the owner of the animal often rejects the suggestion. The earliest proposed medical therapy employed simply the use of systemic and local single antibiotics (Threlfall, 1995). However, this generally leads to either a worsening or a delay in the worsening of the disease, with need for an additional treatment at a later date.
While the usage of oestrogen, oxytocin, testosterone and ergot alkaloids are generally unsuccessful, treatment with PGF$_2\alpha$ and/or antiprogestins is inspiring (Gobello et al. 2003; Feini et al. 1989; Bartoskova et al. 2007; England et al. 2007).

More recent and successful medical treatments have involved the repeated administration of prostaglandinF$_2\alpha$ (PGF), which causes luteolysis and thus reduces plasma progesterone concentrations (Renton et al. 1993). Reduction in progesterone concentrations induces cervical relaxation, a decrease in uterine secretions and, since prostaglandins also have a uterine spasmogenic action which facilitates the expulsion of uterine fluid.

However, when high doses are used, prostaglandins have also been associated with substantial risk of uterine rupture, especially in cases of closed pyometra. Furthermore; higher doses of prostaglandins are associated with substantial adverse effects, including salivation, vomiting, straining, diarrhea, pyrexia, some occasional respiratory distress as well as cases of shock and death (Berchtold, 1997).

Recently, the uses of progesterone-receptor antagonists have been proposed with some controversial results. Progesterone receptor antagonists such as mifepristone (Hoffman et al. 2001) or aglepristone (Wehrend et al. 2003a) bind to the progesterone receptor to prevent progesterone from binding to its receptor to induce transcription and exert all its biological effects at the cellular level. Consequently, the absence of receptor stimulation and activation mimics the effects observed when luteolysis is induced and there by causes relaxation of the cervix.
Controversy still exists regarding the ability of this treatment to induce uterine contractions if used alone. Unlike the action of PGF$_2\alpha$, progesterone antagonists are not expected to induce myometrial contractions. However, only few studies were reported regarding use of different treatment protocols.

Keeping this in view, the present study was undertaken with the following objectives

1. To carry out retrospective analysis of influence of age and breed on the incidence of pyometra in bitches.

2. To determine the serum progesterone concentration in animals with pyometra

3. To record the clinical signs and biochemical changes associated with pyometra

4. To compare the clinical efficacy of different medical protocols such as antiprogestins alone or its combination with either prostaglandinF$_2\alpha$ or PGE.

5. To record and compare the side effects if any, of antiprogestins, PGF$_2\alpha$ and PGE.

6. To suggest an efficient medical protocol for treatment of pyometra.