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Research Article

Efficacy of certain therapeutic regimens in canine pyometra*

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ABSTRACT

Pyometra in dogs is life threatening disorder. Though the hysterectomy is the treatment of choice but it ceased the future fertility permanently. Thus for the prevention of future fertility comparative efficacy of different therapeutic regimens was studied in 24 confirmed pyometra bitches. The bitches were divided into four groups, each group consisting of six bitches. Group I bitches were treated with cloprostenol + intramuscular antibiotics and recorded 83.33% efficacy of the treatment. Group II bitches were treated with cloprostenol + intrauterine antibiotics with an efficacy of 83.33%. Group III bitches were treated with cloprostenol + intramuscular antibiotic + povidone iodine intrauterine and all the six bitches cured completely, indicating 100% efficacy of the treatment. Whereas, bitches in group IV were treated with intramuscular antibiotic + povidone iodine intrauterine and recorded 66.66% efficacy of the treatment. Bitches treated with cloprostenol + intramuscular antibiotics + povidone iodine intrauterine, recorded good and appreciable response than other treatment.

Key words: Canine, Pyometra, Cloprostenol, Intrauterine medication, Ultrasound.

INTRODUCTION

Pyometra either open or closed in dogs is a life threatening disorder. It is most commonly seen in the middle aged bitches in diestrual phase of estrus cycle, when uterus is being exposed to high levels of progesterone. It is hormone related disorder with bacterial infection leading to endometritis and toxemia (Hardy and Osborne, 1974). Several workers have suggested that the condition is more common in nulliparous bitches (Dow, 1958, Dow, 1959[a] and Frost, 1963), while other have suggested that it is more common in bitches with abnormal estrus cycles and pseudopregnancy (Dow, 1959[b] and Whitney, 1967).

There are several reports of successful management of pyometra. The use of prostaglandins is that it causes lysis of corpora lutea (Swift *et al.*, 1979; Sokolowski, 1980; Henderson, 1984 and Wheaton and Barbee, 1993).Prostaglandins natural or synthetic in conjuction with antibiotics are used for treatment of open cervix pyometra with 100 percent results (Valocky *et al.*, 1993). Intrauterine antibiotic infusion and douching with povidone iodine have been also used for treatment of open cervix pyometra (Sen *et al.*, 2001). Therefore, to evaluate the efficacy of different treatment regimens the present study was undertaken.

MATERIALS AND METHODS

The 24 bitches with complaint of pyometra presented at Nagpur Veterinary College Clinic and Govt. Veterinary Polyclinic, Nagpur were used as clinical material. Initially, open cervix pyometra was diagnosed on the basis of history, clinical examination and symptoms. Later on it was confirmed by ultrasonographic examination. The confirmed bitches were divided into four groups, each group comprising of six bitches and were subjected to one of the following treatment regimens after antibiotic sensitivity test (AST). In first three groups we used cloprostenol a synthetic prostaglandin which is 200 times more active than the natural available prostaglandins in market.

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Group I: Intramuscular cloprostenol + Intramuscular antibiotics

In this group cloprostenol was given @ 1 µg/kg body weight (Clostenol, 250µgm/ml-Sarabhai Zydus) im od upto 7 days to all the bitches. Three bitches received Enrofloxacin @ 5 mg/kg body weight (Enrodac, 100mg/ml- Sarabhai Zydus) for 7 days. Of the remaining three, one was treated with Amoxycillin + Sulbactum sodium @ 10 mg/kg body weight (Amoxirum forte 300mg, Amoxicillin 200mg and Sulbactum sodium 100mg- Agrivet Farmcare) , one was treated with Chloramphenicol @ 40 mg/kg body weight (Chlorcetin, 750mg- Dosch) and one was treated with Ampicillin + Cloxacillin @ 10 mg/kg body weight (Ampoxin, 500mg- Unichem laboratories Ltd.) . The antibiotics used were given od im.

Group II: Intramuscular cloprostenol + Intrauterine antibiotics

In this group all bitches were given cloprostenol @ 1 µg/kg body weight (Clostenol, 250µgm/ml-Sarabhai Zydus) im for 7 days od. Four animals were given intrauterine infusion of Amoxycillin + Cloxacillin @ 20 mg/kg body weight (Intamox 0.5, Amoxycillin 250mg + Cloxacillin 250mg- Intas) dissolved in 10 ml distilled water. Whereas, two bitches received Cephalexin @ 1 gm (Lixen- IU, 4gm- Agrivet Farmcare) dissolved in 10 ml distilled water intrauterine.

Group III: Intramuscular cloprostenol + Intramuscular antibiotics + Intrauterine povidone iodine

All the bitches in this group received cloprostenol @ 1 µg/kg body weight (Clostenol, 250µgm/ml-Sarabhai Zydus) im and intrauterine infusion of povidone iodine 5 ml (Betadine Std. Soln, 5% w/v- Win-Medicare) dissolved in 5 ml distilled water for 7 days. Based on AST one bitch was treated with Chloramphenicol @ 40 mg/kg body weight (Chlorcetin, 750mg- Dosch) od im. One bitch was treated with Ampicillin @ 10 mg/kg body weight (Roscillin, 500mg- Ranbaxy) od im. One bitch was treated with Cefotaxim @ 30 mg/kg body weight (C-Tax 1gm- Zuventus Healthcare Ltd.) od im. One bitch was given Amoxycillin + Sulbactum sodium @ 10 mg/kg body weight (Amoxirum forte 300mg, Amoxicillin 200mg and Sulbactum sodium 100mg- Agrivet Farmcare) od im. One was treated with Ciprofloxacin @ 15 mg/kg body weight (Ciprovet, 4mg/ml- Vetindia) od im and one bitch was injected with Gentamicin @ 4 mg/kg body weight (Gentamicin, 40mg/ml- Cadila) bid im.

Group IV: Intramuscular antibiotics + Intrauterine povidone iodine

In this group all bitches were given intra uterine infusion of povidone iodine 5 ml (Betadine Std. Soln, 5% w/v- Win-Medicare) dissolved in 5 ml distilled water. On the basis of AST, two bitches were given Gentamicin @ 4 mg/kg body weight (Gentamicin, 40mg/ml- Cadila) bid im, one bitch was given Ampicillin @ 10 mg/kg body weight (Roscillin, 500mg- Ranbaxy) od im. One bitch was given, Enrofloxacin @ 5 mg/kg body weight (Enrodac, 100mg/ml- Sarabhai Zydus) od im. One bitch was treated with Chloramphenicol @ 40 mg/kg body weight (Chlorcetin, 750mg- Dosch) od im.

Ultrasound guided AI sheath was used for intrauterine infusions in all bitches.

Response to the various treatments was assessed on the basis of variation in the uterine diameter (assessed ultrasonographically) as compared to pre-treatment as well as cessation of uterine discharge and other clinical symptoms.

RESULTS AND DISCUSSION

In group I, 83.33% response to the treatment was recorded and one bitch which did not respond to treatment was subjected to hysterectomy. The present findings are in agreement with those of Sokolowski (1980), Delverdier *et al.* (1984) and Gilbert *et al.* (1981) who reported 87.5%, 85% and 82.5% recovery rate respectively. However, Valocky *et al.* (1997) reported 100% recovery using cloprostenol + antibiotic combination for 9 – 11 days.

Similar response of 83.33% was also recorded in group II. These findings are in close agreement with those of Gurbulak *et al.* (2005) who reported 81.81% recovery. Arora (2005) reported 70% recovery rate

using similar treatment regimens in conjunction with Metronidazole. Only 40% recovery was reported by Huszenicza *et al.* (1985) where as Sen *et al.* (2001) reported 100% recovery after 12 days treatment.

In group III, 100% recovery was recorded. The present findings are in total agreement with Sen *et al.* (2001) who treated 22 bitches of open cervix pyometra with intrauterine infusion of antibiotics followed by vaginal douches with povidone iodine solution for 7 days. However, Arora (2005) recorded 70% recovery rate, inspite of using Gentamicin sulphate in conjunction with Metronidazole as an intrauterine infusion along with parenteral antibiotics and cloprostenol injection.

The lowest response of 66.66% was recorded in group iv in present study. However, Hiremath and Sunilchandra (2004) reported 100% success in treating the case using similar treatment.

In present study, among all the treatment regimens tried treatment employed in group III was found to be most effective as it recorded 100% recovery rate due to combined effect of antibiotic, cloprostenol and intrauterine iodine therapy.

In present study the efficacy of different treatment regimens varied between 66.66 to 100%. Prompt and appropriate medical therapy is therefore suggested as an alternative for hysterectomy, particularly where breeding ability of the bitch is needed to be maintained. Response to the various treatment regimens is presented in the Table-1.

Table 1: Response to the various treatment regimens

Sr. No.	Groups	Treatment regimens	No. of animals	No. of recovered animals	% of recovery
1.	I	IM cloprostenol + IM antibiotic	6	5	83.33
2.	II	IM cloprostenol + I/U antibiotics	6	5	83.33
3.	III	IM cloprostenol + IM antibiotic + I/U povidone iodine	6	6	100
4.	IV	IM antibiotics + I/U povidone iodine	6	4	66.66

Fig.1 **Showing pretreatment Ultrasound guided intrauterine infusion of medicaments. Note the plastic catheter in position and hypoechogenecity of uterus.**

Fig. 2 **Post-treatment sonogram showing increased echogenecity of uterine lumen and reduced diameter of the uterus.**

REFERENCE

Arora, A. (2005). Incidence of pyometra in bitches. Intas Polivet., **6** (1): 103-105.

Delverdier, M., Ferney, J., Royal, L. and Berthelot, X. (1984). Prostaglandin therapy for pyometra in the bitch. Revue-de-Medecine Veterinaire., **135** (3): 155-160 (VET-CD ROM Database).

Dow, C. (1958). The cystic hyperplasia–pyometra complex in the bitch. Vet. Rec., **70** (49): 1102-1108.

Dow, C. (1959a). Experimental reproduction of the cystic hyperplasia - pyometra complex in the bitch. J. Pathol. Bacterial., **78**: 267-278 (C.F. Hagman, R., 2004).

Dow, C. (1959b). The cystic hyperplasia - pyometra complex in the bitch. J. Comp. Pathol., **69**: 237-251 (C.F. Hagman, R., 2004).

Frost, R.C. (1963). Strangulated inguinal pyometrococci in the bitch. Vet. Rec., **75**: 653.

Gilbert, R.O., Nothling, J.O. and. Oettle, E.E (1989). A retrospective study of 40 cases of canine pyometra-metritis treated with prostaglandin F-2 alpha and broad-spectrum antibacterial drugs. J. Reprod. Fertil. Suppl., **39**: 225- 9 (VET-CD ROM Database).

Gurbulak, K.., Pancarci, M., Ekici, H., Konuk, C., Kirsan, I.., Ucmak, M. and Toydemir, S. (2005). Use of aglepristone and aglepristone + intrauterine antibiotic for the treatment of canine pyometra. Acta. Vet. Hung., **53**(2):249-255.

Hardy, R.M. and Osborne, C.A. (1974). Canine pyometra. Patho-physiology, diagnosis and treatment of uterine and extra-uterine lesion. J. Am. Anim. Hosp. Ass., **10**: 245-268.

Henderson, R.T. (1984). Prostaglandin therapeutics in the bitch and queen. Aust. Vet. J., **61**(10): 317-319 (VET-CD ROM Database).

Hiremath S. and Sunilchandra U. (2004). Non surgical and non hormonal treatment of open pyometra in a bitch under field conditions –A case report. Intas Polivet., **5**(11):329-330.

Sen, T.B., Nandi, S.K. and Halder, S. (2001). Efficacy of Intamox in open cervix pyometra in canines. Intas Polivet., **12**(1): 67-68.

Sokolowski, J.H. (1980). Prostaglandin F_2 alpha-THAM for medical treatment of endometritis, metritis, and pyometritis in the bitch. J. Am. Anim. Hosp. Assoc., **16**(1): 119-122.

Swift, G.A., Brown, R.H. and Nuttall, J.E. (1979) Vet. Record., **105**: 64.

Valocky, I., Mojzisova, J., Cochen, C., Matejovic, M., Krajnicakova, M., Lazar, G., Csicsai, G., Novotny, F. and Kacmarik, J. (1997) Experience with combined therapy with prostaglandins in bitches with the cystic endometrial hyperplasia /pyometra complex. Slovensky-veterinarsky-casopis, **22**(2): 79-82.

Wheaton L.G. and D.D. Barbee (1993). Comparison of two dosages of prostaglandin F_2 alpha on canine uterine motility. Theriogenology., **40**: 111-120.

Whitney, J.C. (1967). The pathology of the canine genital tract in false pregnancy. J. Small Anim. Pract., **8**: 247.

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