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Research Article

Effect of Ciprofloxacin therapy in endometritis of cows

G.N.PUROHIT* AND ARVIND SHARMA[2]

Department of Animal Reproduction Gynecology and Obstetrics,
College of Veterinary and Animal Sciences, Bikaner, Rajasthan India

ABSTRACT

Intrauterine infusion of commercial ciprofloxacin was given to cows suffering from different degrees of endometritis. Ciprofloxacin was administered at the dose rate of 750 mg in combination with 900 mg tinidazole for 3-5 days, to cows with endometritis (starting from the day of estrus=day0). The cervico-vaginal discharge in subsequent estrus of 87.5% cows with + degree and 66.7% cows with ++ degree of endometritis became clear whereas 26.6% of total treated cows continued to show flakes of pus in subsequent estrus and were treated again. Seven(7/15) treated cows conceived. The study indicated that ciprofloxacin might be useful in the therapy of endometritis in cows.

Key Words: Ciprofloxacin, Endometritis, Cows.

INTRODUCTION

Endometritis appears to be a common cause of reproductive failure in cattle. Various antimicrobials have been suggested for therapy of endometritis with variable results. Fluroquinolones are an exceptionally important and rapidly developing group of antimicrobial drugs introduced into medicine for a wide variety of infections. The *in vitro* and *in vivo* efficacy of pefloxacin and ciprofloxacin for therapy of uterine infections have been described (Chaturvedi, 1997; Purohit *et al.*, 2003). The present study reports the efficacy of a combination of ciprofloxacin and tinidazole for treatment of endometritis in cows.

MATERIALS AND METHODS

Experimental animals were cows (n=15) brought to the veterinary obstetrics outdoor, veterinary college, Bikaner with a history of repeat breeding or pus discharge. Endometritis was diagnosed and scored by visual observation, recto-genital and speculum examination. Different degrees of endometritis was ascertained with the finding of flakes of pus (+ degree), cloudy or pus mixed cervico-vaginal discharge (++ degree) or foul smell with muco-purulent discharge (+++ degree). Cows were treated by infusion of a commercial preparation containing 750mg of ciprofloxacin and 900 mg of tinidazole for 3-5 days. Animals were examined in subsequent estrus and the recovery rate was evaluated. Cows that showed clear transparent cervical mucus discharge were inseminated with frozen semen. Pregnancy was confirmed by recto-genital palpation at day 60 post insemination. Animals that still showed flakes of pus were treated with the same therapy and inseminated in the next estrus.

RESULTS AND DISCUSSION

The proportion of cows which showed endometritis of (+) degree, (++) degree and (+++) degree was 53.33 % (8/15), 40.0% (6/15) and 6.67% (1/15) respectively. The recovery rate from endometritis among the groups of treated animals and the number of animals conceived are presented in Table 1.

* Corresponding Author email: gnpvog@yahoo.co.in, Phone: 0151-2524876. Fax: 0151- 2543419
[2]Apollo College of Veterinary medicine, Jaipur, Rajasthan.

Table 1. Effect of ciprofloxacin therapy for the treatment of endometritis in cows.

Degree of endometritis	Number of animals	Animals recovered in single therapy	Animals conceived post therapy
+	8	87.5% (7/8)	57.14% (4/7)
++	6	66.7% (4/6)	75.0% (3/4)
+++	1	0%	-
Total	**15**	**78.5% (11/14)**	**63.6% (7/11)**

Results revealed that ciprofloxacin therapy was more effective in endometritis of + degree and ++ degree. The only animal with +++ degree endometritis did not recover from infection in a single therapy and required additional therapy and still did not conceive. A good proportion of cows in which clinical recovery from + degree or ++ degree of endometritis was seen, did not conceive probably because of reasons other than infection which were not investigated during the present study. Singh *et al.* (2004) have shown that on treatment of repeat breeding cows with 1320 mg of ciprofloxacin for 3 days during estrus the estrual mucus become clear in 17/20 treated cows and 47.05% of treated cows conceived. Previous *in vitro* studies have shown that ciprofloxacin was the most effective antibiotic on isolates from cows with endometritis (Chaturvedi, 1997; Money, 1997; Gupta *et al.*, 1997). Likewise clinical trials have shown that on treatment of cows suffering from sub-clinical uterine infection with 2000 mg of ciprofloxacin for 3 days, 85% (18/20) cows conceived on the first service post treatment (Purohit et al., 2003).Similarly high conception rates (80%) were obtained by Das (2004) by infusing 1400mg of another ciprofloxacin. Although slightly lower dose was used in the present study as compared to previous studies(Purohit *et al.*, 2003) the clinical outcome was good during the present study also and the combination of tinidazole have yielded results comparable to slightly higher dose of 1000 mg used in previous study (Chaturvedi, 1997).

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