A CASE STUDY
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Comparative study of two different treatment regimes for management of myiasis in Bovines

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ABSTRACT : Therapeutic effects of two different treatment regimes on the healing of myiasis wound in bovines were evaluated in the present study. The study was conducted in 10 myiasis affected bovines at Cattle Breeding farm, College of Veterinary and Animal sciences, Udgir, Dist. Latur (Maharashtra). The best result was obtained in treatment group B where the wounds were treated with Inj. Ivermectin and Topicure spray than treatment group A where the wounds were treated with Turpentine oil locally and parental administration of streptopenicillin. It was observed that in treatment group B maggots are disappeared within 48 hours and oozing of blood containing fluid was stopped after second day after treatment with Inj. Ivermectin and complete healing of wound was taken place within 8 to 9 days after treatment whereas in treatment group A it was observed that after 4th day of treatment, oozing of maggots and bloody fluid from wound was reduced day by day and complete healing of wound was taken place on 15th day after treatment. Topicure is herbal spray having wide spectrum of activities to treat skin disorders of varied etiology and has better spreadability and deeper penetration into lesions. Also Topicure spray effectively kills the maggots and prevents further re-infestation. The present study suggests that, treatment of myiasis wound with subcutaneous administration of inj.ivermectin single dose and spraying of Topicure spray locally was the most effective and may be practiced for the clinical management of myiasis in bovines.

KEY WORDS : Myiasis wound, Healing, Inj.ivermectin

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INTRODUCTION

Myiasis is a general term for pathological infection by parasitic fly larvae feeding on the host's living tissue. These infestations may cause annoyance to animals and disruption of normal habits including feeding and resting. The condition may cause loss of milk, meat and wool production. Myiasis also affects the quality of hides (McKelvie *et al*., 1993). Oestridae affect livestock production causes abortion, reduced milk production, losses in weight and fertility, poor hide quality and an impairment of the host's immune system causing severe economic losses worldwide (Otranto *et al.*, 2004). The most frequent host for myiasis are cattle (46.4 %) followed by dogs (15.3 %), humans (14.7 %), pigs (6 %), horses (4 %) and sheep (1 %) (Sergio *et al.*, 2007). The prevalence of myiasis has been reported to be 37.4 per cent, the infection rate may, however, go up to 100 per cent (Papadopoulos *et al.*, 1997). Cattle frequently sustain different types of wounds and it appears from clinical impression that a good percentage of these wounds are complicated with maggot infestation. This problem in cattle is fairly common in the field condition particularly in the season of fly prevalence (John, 1999). Myiasis wounds were very prone to occur in the navel, vulva, scrotum and shoulder area. The females were more frequently affected than the males. The therapeutic approaches mainly comprise dressing of wound with tincture of iodine, oil of turpentine or other antibacterial or vermicide agents. The present work was, therefore, undertaken to study the effect of two different therapeutic regimes in the management of myiasis wound in bovines.

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MATERIAL AND METHODS

Ten myiasis affected bovines (3 male and 7 female) of ages ranging from 2 months to 6 years at the Cattle Breeding

Table 1 : Experimental protocol

Groups	No. of animals	Therapeutic regime
A	5	Oil of turpentine (used locally) and streptopenicillin 2.5 g (penicillin and streptomycin) at the dose rate of 10-30 mg/ kg i.m. daily for 5 days. Applied Loraxane ointment locally
B	5	Inj. ivermectin was administered at the dose rate of 0.2 mg/kg s.c. single dose and sprayed Topicure spray locally on wound for 7 to 8 days.

Farm, College of Veterinary and Animal sciences, Udgir, Dist.Latur (Maharashtra) during September 2010- November 2011 were investigated in the present study.

Diagnosis of myiasis :

Diagnosis was made on the basis of wound history, close examination of wound, characteristic odour and bloody/ brownish exudation from the wound and demonstration of maggots (Blood and Henderson, 1983).

Treatment of myiasis :

In group A the affected animal was restrained, the wound area was exposed and maggots were removed with sterile forceps. Gauze dipped in oil of turpentine (Group A) was allowed to remain in the wound pocket for 2 minutes. The maggots came out from the wound to the surface and were removed. After removal of the maggots, Loraxane ointment was applied locally on the wound. Dressing of wound on alternate day was continued until healing. The antibiotic injections streptopenicillin were also given at the dose rate of 10-30mg / kg i.m. once daily for five days. In case of group B only superficial maggots were removed on first day of treatment with forceps, Inj. ivermectin was administered at the dose rate of 0.2 mg/kg s/ac. single dose and sprayed Topicure spray locally on wound for 7 to 8 days.

The responses to the treatment were assessed on the basis of clinical improvement and time required for wound healing.

RESULTS AND DISCUSSION

The therapeutic effect of two different treatment regimes on healing of myiasis wound in cattle was assessed on the basis of clinical improvement and time required for wound healing. The best result was obtained in group B where the wounds were treated with Inj. Ivermectin and Topicure spray. It was observed that maggots are disappeared within 48 hours and oozing of blood containing fluid was stopped after second day after treatment with Inj. Ivermectin and complete healing of wound was taken place within 8 to 9 days after treatment. The subcutaneous administration of ivermectin and simultaneous administration of combined penicillin and streptomycin also yielded good result where healing of wound (94 % wound depth and 90 % wound area) occurred at day 17 of therapy (Rahman *et al.*, 2009). Ivermectin is a broad spectrum anthelmintic effective against both ectoparasites and endoparasites including the maggots (Howard and Smith, 1999). It is assumed that ivermectin blocks nerve impulses on the nerve ending through release of gamma amino butyric acid (GABA), linking to the receptors and causing palsy and death of the mature and immature parasites (Campbell, 1985). Sharma (1994) reported that ivermectin was effective in healing granulating wound without complication. A chemotherapeutic trial with ivermectin in yaks at the dose rate of 1 µg/kg s.c. in the neck region was sufficient to kill or stop development of larvae of *Hypoderma* spp. in naturally infected myiasis (Anonymous, 2000). Charbon and Pfister (1997) stated that the ivermectin "microdose" applied to young animals or dry cows affected with myiasis showed an efficacy in almost 100 per cent cases.

After the treatment as A group (Table 1) it was observed that after 4th day of treatment, oozing of maggots and bloody fluid was reduced day by day and complete healing of wound was taken place on 15th day after treatment. The efficacy of oil of turpentine in the treatment of maggot wound has been reported by Agarwal and Singh (1990).

It appears from the present study that treatment of myiasis wound with subcutaneous administration of inj.ivermectin single dose and spraying of Topicure spray locally was the most effective in the field condition as it avoids day to day manual removal of maggots from wound and saves time on treatment, results in early healing of wound with controlling other endoparasite and ectoparasites of animals.

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