USE OF TERRAMYCIN IN CONTAGIOUS ECTHYMA OF GOATS

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ABSTRACT

Three hundred goats affected with contagious ecthyma, brought to the Civil Veterinary Hospital Dera Ghazi Khan from mid of October 1997 to 5th of January 1998, showing papules, pustules, ulcers and brown scabs on the lips, commissures and udders. They were divided into three groups on the basis of age. These groups were further subdivided on the basis of lesion distribution on the body and various stages of contagious ecthyma. Fifty animals of *group I* (n=100) showed severe signs of lower lip immobility due to pustules and ulcers, and 50 animals of *group II* (n=150) showed scabs on commissures and debility while 30 animals of *group III* (n=50) showed loss of weight and developed complications like myiasis and inflammation of lips. Other animals of all groups showed mixed symptoms of the disease. Terramycin injection at dose rate of 50mg/10Kg of body weight lessened the severity of disease and shortened the duration of contagious ecthyma.

INTRODUCTION

Contagious ecthyma, also called contagious pustular dermatitis or Orf, is one of the highly contagious diseases of sheep and goat, characterized by formation of papules, pustules, ulcers and scabs on the lips, nostrils, commissures and udder of infected animals. Its incidence may be as high as 90% in herds of sheep and goat without any difference of age and sex. It has been reported from Iraq (Hussain *et al.*, 1996), Australia (Higgas *et al.*, 1996), Korea (Kin *et al.*, 1996), UK (Nettleton *et al.*, 1996) and Germany (Czerny *et al.*, 1997). Contagious ecthyma not only causes 15% mortality in young stocks (Blood and Radostits, 1989) but also great reduction in the body weight of mature animals (Gillespie *et al.*, 1981; Blood and Radostits, 1989).

Before this epidemic, goat population in Dera Ghazi Khan has faced an outbreak of a Pneumo-enteritis syndrome that caused a severe mortality in the goat population (Ayaz *et al.*, 1997). Such type of diseases affect badly the socio-economic position of the common people who are completely dependent on the rearing of goats. Nearly 26% of the total livestock comprises of goats in Dera Ghazi Khan district (Anonymous, 1996-97) that is reared mostly by poor people. It is dire need of the country to control such type of viral diseases which not only cause economic loss but are also communicable to humans (Gillespie and Timony, 1981; Winkler, 1982; Buchan, 1996).

The present study reports the effect of Terramycin on the duration of disease and severity of lesions in naturally affected goats.

MATERIALS AND METHODS

Three hundred goats affected with contagious ecthyma were brought to Civil Veterinary Hospital Dera Ghazi Khan from mid of October 1997 to 5th January, 1998. Disease was diagnosed on the basis of clinical signs and symptoms exhibited by the animals (Blood and Radostits, 1989). Affected animals were divided into three main groups on the basis of age and further sub-divided on the basis of severity of lesions.

Group I: Consisted of 100 animals of 5 to 30 days of age.
Group II: Consisted of 150 animals of 31 days to 6 months of age.
Group III: Consisted of 50 animals of 6 months to 3 years of age and above.
Group IV: Consisted of ten animals kept as control for 30 days.

Distribution of the lesions on the body of animals was recorded and diseased animals were treated with Terramycin injection (Pfizer) (@ 50 mg/10 Kg of body weight; i/m). Ten animals were kept as control without any treatment and supportive therapy (Group IV).

Antibiotic therapy with terramycin was continued till the curing of diseased animals. Other supportive therapy like anti-septic dressing was also given in severe cases. The data were analysed statistically by the simple scoring method (Steel and Torrie, 1981).

RESULTS

Distribution of lesions of contagious ecthyma among various groups of goats on various parts of the body has been presented in Table 1. In group I (n=100), 20% animals showed lesions on upper lips, 28% animals showed commissure sign while 50% showed lesions on lower lips. In group II (n=150), the upper lips lesions were in 13.3%, lower lip lesions in 20.0%, nostrils were infected in 6.6%, commissure involvement was in 33.3% and thigh lesions and tongue lesions were found in 6.6% and infected udders were observed in 20% animals. In group III (n=50), 10% of animals showed upper lip lesions, 20% of lower lip lesions and 20% of lesions on nostrils. 30% animals showed lesions on commissures while lesions on thigh and udder was in 6 and 14% of the animals, respectively. While in group IV (n=10) control animals of various ages showed 100% infection of contagious ecthyma.

Papules were observed in 5.5% animals of group I, 6.6% in group II and 20% in group III these were given treatment for 5 days with Terramycin. Animals of group I and III cured in 5 days while that of group II received treatment for 6 days. In control group IV, lesions continued up to 8 days without any treatment (Table 2).

Pustules were shown by 30% animals of group I, 20 (13.2%) animals of group II and 40% animals of group III those were given treatment for 6, 6 and 5 days, respectively while in group IV these symptoms continued up to 11 days.

Ulcers in 50% animals of group I, 26.4% animals of group II and 10% animals of group III were cured in 8,10 and 7 days, respectively while in control animals lesions continued up to 15 days. The scabs were healed in 5% animals of group I, 40% animals group II and 20% animals of group III in 10 days while control group IV took 18 days to slough the scabs till cure. Wounds of animals of group I (5%) and group III (3.3%) were completely healed in 10 days while wounds of 6% animals of group II took 15 days to cure. Control group IV took 23 to 30 days for complete cure of wounds.

Myasis (6.6%) in group II and 2% in group III and immobility of lips in group I (5%), II (3.3%) and III (2%) took maximum 15 days to heal. These all complications took 23 to 30 days in contagious ecthyma patients for complete cure.

None of the animals died from any of the groups during the course of study. Cure rate was 100% in the groups of animals treated with Terramycin injection.

DISCUSSION

Contagious ecthyma is one of the highly contagious diseases of the goat with morbidity of 90% in stocks of all ages (Blood and Radostits, 1989). This disease is caused by parapox-virus and is characterized by formation of papules, pustules, ulcers and scabs (Gillespie and Timony, 1981; Winkler 1982), as described in Table 2. Mortality up to 15% has been observed in young stocks by Blood and Radostits (1989) but none of the animal died from *Group I* during the study (Table 2). Transmission of disease was rapid in young (*Group I)* and adult stocks (*Group II)*. The highest involvement of upper and lower lip lesions was in group I because of their weak immunity status while in group II a moderate number of animals showed lesions on commissures, upper lips, lower lips, nostrils, thigh, tongue and udder. The reason was its first exposure to the outbreak while group III showed very slight symptoms except high involvement of nostrils. The animals showing papules and pustules were highest in group III among the other groups. Ulcer formation was high in group I while scabs percentage was high in group II. Miyasis was high in group II while immobility of lips was high in group I due to direct contact for milking from udder of dams. They were not previously immunized against the attack of disease that was in accordance with the observations of Gillespie and Timony (1981); Winkler, (1982) and Blood and Radostits (1989). The incidence of the disease was observed in winter season as also been described by Siegmund (1979) and Blood and Radostits (1989). Most of the previously outbreaks were observed in summer, autumn and spring seasons (Khan and Kazmi, 1981; Gillespie and Timony, 1981 and Winkler, 1982). Transmission of disease was through direct contact among most of the adult animals and udder contamination in young stocks (Winkler, 1982), the source of infection might be wound of skin and mucous abrasions (Winkler, 1982; Blood and Radostits, 1989; Nettleton *et al.*, 1996). The development of papules was not noticed by the stock owners in animals brought for treatment.The incidence of the disease in group I and II was high due to the lack of immunity from contagious ecthyma because once infected, animal remains immune for the next year (Gillespie and Timony, 1981; Winkler, 1982). One of worse quality of contagious ecthyma virus is that it remains for 12 years in scabs without risk of desiccation (Siegmond, 1979) and can cause disease in non-immunized animals as well as in men with close

association like shepherds and veterinarians (Gillespie and Timony, 1981; Winkler, 1982; Blood and Radostits, 1989; Buchan 1996).

Animals of group III did not exhibit severe signs of disease. The cause might be immunization from incidences occurred previously that were in accordance with the observations of Gillespie and Timony (1981) and Blood and Radostits (1989). The use of terramycin injection intra-muscularly in diseased groups at dose rate of 50mg/10 Kg of body weight shortened the duration of disease as mentioned as animals of group I, II and III showing papules were cured in 5-6 days. In the similar fashion animals of all three groups showing pustules cured with in 5-6 days. Ulcers healed in 7-10 days. In the similar way other complications like myasis and immobility of lips was cured in 15 days. In this way the animals of group I, II and III benefited and cured in a week or two weeks earlier depending upon the health status of animals than the control group IV. The duration of disease was up to 30 days in control animals (table II) that was similar with the findings of Gillespie and Timony (1981) and Blood and Radostits (1989).

Injecting live virus from scabs (Winkler, 1982) vaccine was avoided due to its survival up to 12 years in scabs due to its resistance and spreading in the persons working close with them. This was done to eliminate the chance of re-infection in the area and to safe the other non-infected animals of the entire area.

The use of Terramycin injection was found useful in the control of rapidly spreading disease of contagious ecthyma in goats. It not only shortened the duration through checking the secondary infections but also lessened the severity of disease. This all could be achieved without contaminating the entire area from virus with the help of field workers and in the absence of adequate laboratory facilities.

Table 1: Number of infected animals with distribution of contagious ecthyma lesions on the various regions of the body

Groups	Upper Lips	Lower Lips	Nostrils	Commissure	Tongue	Thigh	Legs	Udder
Group I (n=100) aged from 5 day to 30 days	20(20)	50(50)	2(2)	28(28)	Nil	Nil	Nil	Nil
Group II (n=150) aged from 31 days to 6 months	20(13.3)	30(20)	50(33.3)	50(33.3)	5(6.6)	5(6.6)	Nil	30(20)
Group II (n=50) aged from 6 months to three years and above	5(10)	10(20)	15(30)	15(30)	Nil	3(6)	Nil	7(14)

Figures in parenthesis indicate percentage.

Table 2: Number of infected animals with severity/various stages of contagious ecthyma and duration of treatment in days with terramycin injection at the dose rate of 50 mg/10 kg body weight.

Severity/ various stages of contagious ecthyma	Group I (n=100)	Duration of treatment (Days)	Group II (n=150)	Duration of treatment (Days)	Group III (n=50)	Duration of treatment (Days)	Group IV (n=10) *	Symptoms of disease
Papules	5(5)	5	10(6.6)	6	10(20)	5		8
Pustules	30(30)	6	20(13.2)	6	20(40)	5		11
Ulcers	50(50)	8	40(26.4)	10	5(10)	7		15
Scabs	5(5)	10	60(40)	10	10(20)	10		18
Wounds	5(5)	10	5(3.3)	15	3(6)	10		
Maggots and other complications (Myasis)	Nil		10(6.6)	15	1(2)	15		23 days to 30 days
Immobility of lips	5(5)	10	5(3.3)	15	1(2)	15		

Figures in parenthesis indicate percentage; * Control animals without treatment.

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