PREVALENCE OF FASCIOLIOSIS IN BUFFALOES AND COMPARATIVE EFFICACY OF ENDOACTIVEN AND NITROXYNIL AGAINST FASCIOLIOSIS

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ABSTRACT

The prevalence of fascioliosis in 12 different villages of union council Jia Bagga, District Lahore was studied. The comparative efficacy of two flukicidal drugs namely Nitroxynil (Trodax, 34%) and Endoectiven (Closantal) was evaluated. For this purpose 200 buffaloes were randomly selected on the basis of clinical signs like foul smelling, watery diarrhoea, swelling on the brisket, bottle jaw, anorexia and hypothermia with abrupt decrease in milk yield. Among these, 60 animals were confirmed positive for *Fasciola* with floatation technique. These animals were divided into three groups namely, A, B and C. Group A remained as untreated (control). Group B was medicated with Nitroxynil, while group C was medicated with Endoectiven. Eggs per gram counts of feaces were made with the help of modified Mc. Master technique on zero day pre-medication and on 7th day post medication. The results showed 30% prevalence of *F .hepatica* infection. The percentage efficacy for Nitroxynil was 93.88, while for Endoectiven it was 91.91%. Side effect of local swelling at the site of injection which lasted for about one month was recorded for Endoectiven while for Nitroxynil, no side effects were recorded.

Key word: Fascioliosis, Nitroxynil, Endoectiven.

INTRODUCTION

Livestock industry is playing a vital role in the economy of the developing countries like Pakistan. The animal population of Pakistan in the year 2004-05 was estimated as 24.2 million cattle, 26.3 million buffaloes, 24.9 million sheep and 56.7 million goats. Over 70 percent of the population in Punjab is rural and 70 percent of all farms are less than 12 acres in size. The share of Punjab province in livestock population is 46% for cattle, 67% for buffaloes, 26% for sheep and 37% for goats.(GOP, 1996).The net foreign exchange earnings from the livestock sector is Rs.53 billion.(GOP,2005-06). Livestock production is an integrated part of agriculture in Pakistan, playing an important role in the mixed farming system, providing an important part of the dietary protein for the population and contributing substantially to export earnings. Livestock contributes almost 50% to the value addition in agriculture sector and about 11.4 percent of the Pakistan's GDP which is higher than the contribution made but crop sector (47.4 % in agriculture and 10.3% in GDP). The livestock production includes milk, beef, mutton, poultry meat, wool, hair, bones, fats, blood, eggs, hides and skins.

Losses to livestock due to fascioliosis are in the form of retarded growth, reduced milk, meat, hides, skin and production and even high percentage of morbidity and mortality in the young stock. Among the parasitic problems fascioliosis is very important and is caused by *Fasciola hepatica, F. gigantica, and F. magna* (Robert *et al*, 2005). Mixed infection with *F. hepatica* and *F. gigantica* has been reported in Pakistan (Tahir, 2002).

The present study has been designed to work out the prevalence and comparative chemotherapy of fascioliosis in buffaloes at union Council Jia Bagga, district Lahore.

MATERIALS AND METHODS

A survey was conducted to estimate incidence of facioliosis in buffaloes belonging to 12 different villages of union council Jia Bagga, District Lahore. A total of 300 animals showing signs of diarrhea were examined and about 5 gm rectal faecal samples were collected from each animal in small polythene bags and were labeled for further process. Faecal samples were collected on zero day and 7th day post-medication. Faeces were examined by following methods:

1. Direct smear examination (Soulsby, 1982).
2. Sedimentation technique (Soulsby, 1982).

Counting of Eggs was made by Modified McMaster Technique (Soulsby, 1982).

Out of f 300 animals, 60 were found positive for fascioliosis. These were randomly divided into 3 groups i.e. A, B and C each having 20 animals. Animals in group A were served as control whereas animals in groups B and C were given Nitroxynil and Endoectiven respectively at their recommended dose rates.

Chemotherapeutic trails: Two drugs were used in the present work. The detail is given as follows:

1. Nitroxynil (Trodax 34%) a product of Merial Pharmaceuticals Limited, France was given

subcutaneously at the rate of 1.5 ml/50 kg body weight.

2. Endoectiven (Closantal) a product of Iven Laboratories, Spain was given subcutaneously at the dose rate of 0.5 ml of product /10 Kg body weight.

Efficacy of drugs was calculated as per formula described by Muskey and Hardwood (1941).

RESULTS AND DISCUSSION

The prevalence of liver flukes in the area was recorded as 30% in buffaloes. The reason for the incidence of disease in the area may be due to conducive factors like presence of marshy places with grass at the canal banks (to which cercariae attach) and presence of snails in the area. These findings are in accordance with Tahir (2002), Dipeolu and Eruvbetine (2000). Yuling and Zang (1997) reported that outbreaks of fascioliosis occurred after flooding. Chaudhry *et al* (1993) reported a higher percentage of fascioliosis in buffaloes than cattle. According to them the higher incidence in the district of Kurukshetra of eastern Harayana, India was due to presence of lakes in the area.

Groups A, B and C had an average EPG counts of 250,245 and 235, respectively at zero day before treatment. On day 7 there was a slight rise in the average EPG of the control group (A), 250 to 265. In group B there was decrease in average EPG count from 245 to 15 showing efficacy of Nitroxynil, 93.88%. No side effects were recorded with the recommended dose. In group C the average EPG decreased from 235 to 19 showing efficacy of Closantal as 91.91%. Local swelling at the site of injection which lasted for about one month was the side effect recorded for this drug. The percentage efficacy of Nitroxynil detected in the present study was lower than estimated by Richard *et al* (1990). According to them the efficacy was 99% against liver fluke in cattle while it was higher than reported by Tahir (2002). According to him the efficacy was 92.49% against liver fluke in cattle. The difference in efficacy may be due to variation in climate, experimental procedure, dosage or number of days post medication when EPG was counted (Duncan, 2004). The percentage efficacy of Nitroxynil as estimated in the present study was comparable with the findings of Alam *et al* (1995) who recorded it as 93%.The percentage efficacy (91.19%) of endoectiven calculated in the present study was lower than estimated, 95%, by Bostelmann *et al* (2000) against liver fluke while it was higher than estimated (90%) by Boulard *et al* (1998). The difference in efficacy may be due to above mentioned factors or the phenomenon of anathematic resistance. The percentage efficacy of Closantal as estimated in the present study was comparable with the findings of Bedarkar *et al* (2000), they worked out it to be 91%.

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