

STUDY ON THE PREVALENCE OF BOVINE FASCIOLIOSIS AT BAUPHAL UPAZILLA OF PATUAKHALI DISTRICT IN BANGLADESH

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A study was conducted during the period from 20 September, 2015 to 14 November, 2015 to determine the prevalence and therapeutic assessment of bovine fascioliosis at Bauphal Upazilla under Patuakhali district in Bangladesh. A total of 85 bovine cases were considered for the present study. The overall prevalence of fascioliosis was 54.12 (%). The age of the study population were divided in three groups i.e. < 3 years; 3-5 years; >5 years with the prevalence(%) of fascioliosis were 47.06 %, 54.06% and 71.43% respectively. Among the study population the higher prevalence was recorded in female 56.52% followed by male 51.28%. The prevalence (%) was higher in cross bred 58.54% than the local 50.00% cattle. Although this study period and sample size were very small, but the result of the present study will help to establish better treatment and control strategy against fascioliosis in cattle.

Keywords: Prevalence, Fascioliosis, Sex, Breed

Parasitism is thought to be one of the main obstacles in livestock rearing and production and subsequently in the development of livestock in Bangladesh (Jabber and Green, 1993). Fascioliasis is cosmopolitan in distribution. Incidence of the infection has been reported in many countries including Nigeria, Pakistan, China, United States of America and Iran (WHO, 2006, Valero *et al.* 2010). Among various GI parasitic diseases, fascioliasis is a highly pathogenic parasitic

disease caused by *Fasciola hepatica* and *Fasciola gigantica* (Talukder *et al.* 2010). The major endemic areas for *F. gigantica* are large tropical regions of Africa and many areas of Asia including India, Pakistan and Bangladesh (Mas, 2004). Karim *et al.* (2015) reported 66.14% prevalence rate of *Fasciola gigantica* infestation in Cattle in Bangladesh. Ghosh, (1988) reported that about TK. 54 million is the annual loss caused by fascioliasis in Bangladesh. Rahman and Razzak, (1973) reported 16.3% *Fasciola gigantica* infestation among cattle of comilla District. Garrels, (1975) recorded 22.4% infestation with fasciola on coprological examination of cow in some villages of Dhaka and Tangail district. Fascioliasis is a zoonotic disease having public health importance. About 2.4 million people are infected world wide and 180 million are at risk of the infection (WHO, 2006; Talukder *et al.* 2010). There is very limited work conducted in the southern part of Bangladesh regarding the prevalence of Fascioliosis. Considering those situations the study was conducted to study the prevalence of fascioliosis in cattle at Bauphal upazila in Patuakhali district.

MATERIALS AND METHODS

Location and duration

The present study was conducted at Bauphal Upazilla Hospital at Bauphal Upazilla under Patuakhali district in Bangladesh. The study was conducted from 20 September, 2015 to 14 November, 2015.

Coprological examination

A total of 85 numbers of cases of cattle were recorded randomly during the study period. After taking all the relevant history, the fecal samples were collected directly from the rectum of the cattle or immediately after defecation or from the ground when the animals were found in the act of defecation. About 15-25 grams of feces were collected from the animals. Each sample was transferred to jar containing 10% formalin and numbered properly. The correctly labeled and properly numbered jar containing the fecal samples with all required information was brought to the laboratory. The fecal sample was examined using standard direct smear method of fecal sample examination (Soulsby, 1982).

Diagnosis of diseases

Diagnosis of diseases was made by history, general physical examination of animals, clinical signs, and final diagnosis made on the basis on coprological examination under light microscope. *Fasciola* eggs were confirmed by the characteristics of oval shaped, operculum present, yellow brown in color. Presence of single eggs in the feces was considered as positive.

Statistical Analysis

The prevalence rate were calculated by using MS excel program windows-7. Chi-square χ^2 test and P value (5% level of significance) are calculated by the help of SSS (online) software. A descriptive analysis was performed to interpret the data.

RESULTS AND DISCUSSION

Overall prevalence of Fascioliosis of cattle

A total number of 85 cattle were recorded among them 46 cases were identified as clinical fascioliosis after fecal examination under microscope. The overall prevalence of fascioliosis during this period was found to be 54.12 per cent (%) (Fig. 01).

The finding of the present study is supported by of Rahman, M.H. *et al.* (1983) who recorded 53% Fascioliosis in cattle in Bangladesh. On the other hand the result is higher than the earlier report of Afroze, S. *et al.* (2013) and much higher than the reports of Garrets, G. (2013) and Singh, A. *et al.* (2009) who recorded 41.41%, 25.2%,

22.4% and 19.3% prevalence of Fascioliosis in cattle, respectively. The variations in the findings might be due to the difference in the sampling and sample size, sample selection procedures, period and geographical location of the study area and technique used fecal sample examination.

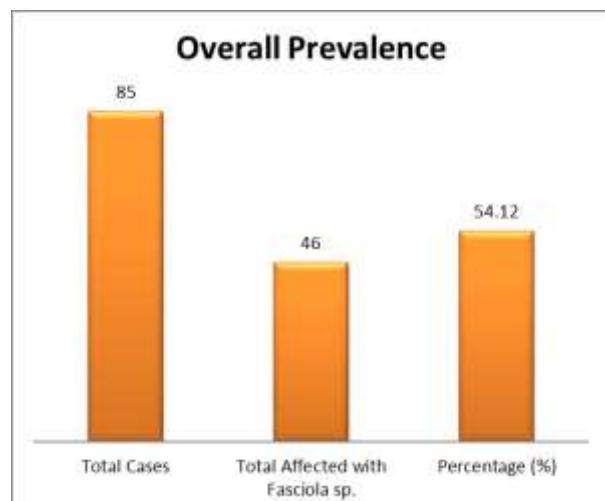


Fig. 1: Overall prevalence of Fascioliosis in cattle

Age wise prevalence of fascioliosis in cattle

The age of the animals is considered as a major factor in the prevalence of Fascioliosis. The prevalence of different age group are summarized in table In the present study, Fascioliosis was observed higher in cattle aged above 5 years (71.43%) and lower in the cattle aged between 3-5 years (54.06%). On the other hand, the prevalence of fasciola in cattle <3 years of age was lowest (47.06%) (Table 1).

Table 1: Prevalence of Fascioliosis among different age group

Age group	No. of cases	No. of affected cases	Prevalence (%)
< 3 years	34	16	47.06
3-5 years	37	20	54.06
>5 years	14	10	71.43

The infection rate increased with the increase of age. This result is in agreement with the earlier findings of Molina, *et al.* (1996) and Bhutto, *et al.* (2000). The highest

level of infection in older group i.e., above 6 years (62.62%) followed by in age groups of 4-6 years (57.28%), 2-4 years (42.56%) and up to 2 year (17.87%) were reported by Bhutto, B. *et al.* (2012). This findings is supported by the statement of Sarder, *et al.* (2006); Khandaker, *et al.* (1993) who reported that, the prevalence of *Fasciola gigantica* were highest in cattle of more than 36 months of age and lowest in the age of less than 12 months. The higher infection rate in older animals could be due to long time exposure to disease entity and their grazing habit close to submerge areas.

Sex-wise Prevalence (%) of fascioliosis in cattle

One of the strategies of the present study was to observe the occurrence of fascioliosis between different sexes. In the present study, female's cattle (56.52%) have the higher prevalence to fascioliosis than males (54.28%) (Fig. 2).

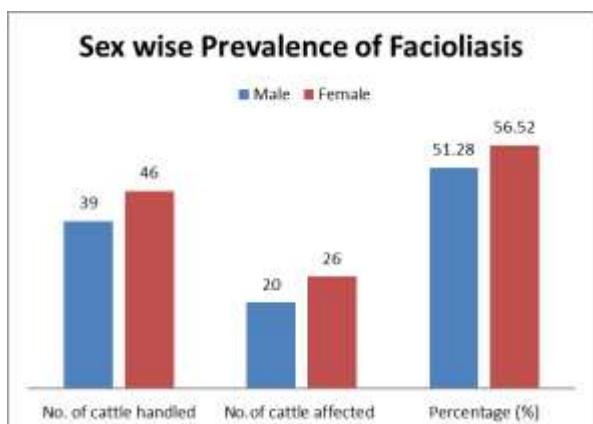


Fig. 2: Prevalence of Fascioliasis in different sexes

This findings is supported by the findings of Hossain and Ali, 1998; Bedarkar *et al.*, 2000 who reported that female (41.36%) cattle are highly susceptible than male (13.85%). The higher percentage of infection in the females cannot be explained exactly but it might be assumed that hormonal influence as well as stress leading to immune suppression may be associated with this phenomenon.

CONCLUSION

Prevalence of bovine fascioliosis of Bauphal upazila is attributed by multifactorial risk factors which comprise host, parasite and environmental effects. The prevalence was

significantly affected by sex, age and seasons of the year. The overall prevalence of fascioliosis in cattle was **54.12 per cent (%)**. The higher prevalence of bovine fascioliosis was recorded in females (56.52 %) cattle than male (51.28 %). The Prevalence was higher in older cattle > 5 yrs (71.43 %) than the lowest younger > 3 yrs (47.06 %). Epidemiological investigation of fascioliosis is considered as tools for controling bovine parasitic infection. In Bangladesh there is lack of epidemiological record regarding fascioliosis. Although the present study results have some limitation because low sample size that improper diagnosis. Bovine fascioliosis is one the major constrains for cattle development in our country. Further epidemiological study is strongly recommended. Despite of all constrains the present study findings will help researchers for further epidemiological study of bovine fascioliosis.

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