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RSEARCH PAPER

Symptoms and pathogenicity of *Haemonchus contortus* in sheep

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ABSTRACT

Present study has dealt with the symptoms and pathogenicity of *Haemonchus contortus* in sheep of Kanpur region. On post-mortem examination of 240 abomasums and same number faecal samples from the slaughtered sheep aged between 1-2 years collected from the largest slaughter house Bazaria, Kanpur during the period from Nov. 2006 to Oct. 2007. A total 14 (5.83%) sheep were observed affected from *H. contortus* and caused haemonchosis. Grossly, abomasal mucosa was thickened along with hemorrhages and catarrhal ulcers in response to parasites, bites and large number of worms were present in abomasums.

Key words : *Haemonchus contortus*, Symptom, Pathogenicity and sheep

Haemonchus contortus is the only an important blood sucker nematode parasite under the family Trichostrongyloidea worms which live in the abomasums of sheep, goats and cattle. The present study relates to sheep, which is most precious animal for milk, meat and wool products. The heavy infection of this genus causes to produce loss of body weight, digestive disturbances, poor growth and decreased production of wool in sheep (Blood and Radostitis, 1989). According to Basith (2002) chronically haemonchosis is characterised by progressive weakness, wool falling, anaemia and bottle jaw condition. This form is most common in the area where mortality is low but morbidity is reached 100 per cent. According to Urquhart *et al.* (1987), each worm removes 0.05 ml blood per day so that sheep with a 500 *H. contortus* may loss about 250 ml per day resulting in decrease in erythrocytes, lymphocytes, hemoglobin, PCV, body weight and sheep become very weak and emaciated. According to Fitch (2006) 10,000 adult *Haemonchus* worms can kill a sheep. Keeping in view, the present investigation was conducted to enunciate the symptoms and pathogenicity of *Haemonchus contortus* in sheep.

MATERIALS AND METHODS

To record the prevalence and pathogenicity of haemonchosis caused by *H. contortus*, 240 abomasums from slaughtered sheep collected randomly from the largest slaughter house Bazaria, Kanpur city were examined in the laboratory and processed for worm recovery and some of them were washed with lukewarm water and fixed in hot alcohol: glycerol (95:5) and mount in lacto-phenol as temporary preparations for their identification. Small pieces of affected tissues and abomasums were collected and preserved in 10% neutral buffered formaline for pathological and histopathological examinations. Tissues were also sectioned at 4-5 mm and stained with haematoxylin and eosin. Faecal samples were processed by sedimentation technique (Sastry, 2000) and eggs were confirmed on the basis of morphology reported by Soulsby (1982).

RESULTS AND DISCUSSION

The results obtained from the present investigation are summarized below :

Incidence:

In the present study, out of 240 examined sheep aged between 1-2 yrs, a total 14 (5.83%) sheep were found infected with *Haemonchus contortus,* based on faecal samples examination and gross pathological examination of abomasums in the laboratory. Appearance of pathological lesions on microscopic examination of infected abomasums, 12 (5%) were recorded in changed conditions. Out of that 5(2.08%) had inflammatory changes, 4(1.66%) had congestion and hemorrhage ulcers, 3(1.25%) had catarrhal ulcers or small bite marks and 2(0.83%) were about to get changed their conditions shown normal (Table 1).

Gross pathology:

During the post-mortem, gross pathological changes and involvement of organs were noted (Table 1). Thoracic and peritoneal cavity revealed oedematous fluid. Mucus membranes were pale and anaemic. The internal organs

were also pale. The liver was light brown in colour, soft, swollen, easy to cut and incised portion bulged indicating fatty changes. Abomasal contents were mixed with blood. This finding was in agreement as reported by Yadav (1997) and Narwade *et al.* (2002) in sheep. Abomasal mucosal revealed swollen along with small red bite marks and small hemorrhages and catarrhal ulcer and large number of worms were present in abomasums.

Histopathology:

Histopathological examination revealed several pathological lesions in abomasums of sheep. Microscopically, the mucus membrane in general showed necrosis of the superficial part of villi, infiltration of inflammatory cells in lamina properia and muscle layer. Subcutaneous fat became gelatinous tissue. Hyperplasia of the glandular epithelium and marked increase in the number of goblet cells were also observed.

The various symptoms of Haemonchosis in sheep enunciated in the present study will help to control such disease caused by *Haemonchus contortus*.

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REFERENCES

Basith, A. (2002). Parasitic diseases of small ruminants. In: *Training manual on advan. in the diag. and management of disease of small ruminants and pet animals.* (Ed. Dhanapalan, P.) 2002. Cent. of Adv. Stu. in Clinical Medi. and Therapeutics, Tamil Nadu Vetenary & Animal Science, Uni. Madras Veterinary College Chennai- pp. 27.

Blood, D. C. and Radostitis, O. M. (1989). *Veterinary medicine*. 7th Edn., Bailliere Tindall, London and New York : 1265.

Fitch, Gerald Q. (2006). Internal parasite control in sheep in Qklahoma.http://pods. dasnr.okstate.edu/docushare/dsweb/Get/Document 2149/F- 3858 Web. pdf, P.1.

Narwade, V. E., Thorat, B. P. and Jadhav, P. D. (2002). 5th National Seminar on strength, challenges and opportunities in small ruminants disease in New Millennium, Dec. 30-31, 2002, Jaipur : 139.

Sastry, G. A. (2000). Clinical parasitology. In: *Veterinary clinical pathology*, pp. 79-80, Triputa, Triupati.

Soulsby, E.J.L. (1982). *Helminths, Arthopods and Protozoa of Domesticated Animals,* 7th Ed. The ELBS and Bailliere Tindall, London.

Urquhart, G.M., Armour, J., Duncon, L., Dunn, A.M. and Jennings, F. W. (1987). *Veterinary parasitology.* Longman Group UK Ltd. England, pp. 19 and 276-277.

Yadav, C.L. (1997). Ovine premature births caused by *Haemonchus contortus Indian Vet. J.*, **74** : 983-984.

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