

## Parasitic Gastroenteritis in a Merino Sheep Farm

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**Abstract:** Parasitic gastroenteritis is a disease complex associated with a number of nematode species either singly or in combination. The study was conducted in a semi intensive sheep farm consisting of 25 lambs, 68 ewes and 9 rams with high lamb mortality. Clinical signs of diarrhea, inappetance, weakness, gradual loss of body weight, pale oral and conjunctival mucous membranes and intermandibular edema were noticed in seven lambs, fifteen ewes and two rams. Fecal examination of both clinically ill and healthy sheep were positive for severe mixed infestation with strongyloid and strongylus ova. Hematology and serum biochemistry revealed severe anemia ( $3 \pm 0.31$  g/dl), eosinophilia ( $25.25 \pm 1.63$ ), hypoproteinemia ( $3 \pm 0.13$  g/dl) and hypoalbuminemia ( $1.62 \pm 0.24$  g/dl). All the animals were treated with single doses of Ivermectin @  $200 \mu\text{g}/\text{kg}$  sc and chlorpheniramine maleate @  $0.5 \text{mg}/\text{kg}$  and daily iron supplementation along with concentrate feed. Marked improvement was noticed on day 3 onwards, complete clinical recovery was noticed on day 7.

**Keywords:** Parasitic gastroenteritis, Sheep, diarrhea, edema, hypoproteinemia, ivermectin

### INTRODUCTION

Parasitic infections constitute an important group of diseases in sheep affecting the health and productivity of the herd. Parasitic gastroenteritis (PGE) is a disease complex associated with number of nematode species (mostly strongyles), either singly or in combination. It is characterized by diarrhea, less than optimum productivity, seasonal appearance and hypoalbuminaemia. Strongyle nematodes are the main cause of PGE in grazing animals and in particular those found in two superfamilies; Trichostrongyloidea and Strongyloidea. Non-bursate nematodes are rarely responsible for PGE, although Strongyloide species (a member of the family Rhabditoidea) may sometimes contribute to the disease [1].

### MATERIALS AND METHODS

A semi intensive Merino sheep farm consisting of 25 lambs, 68 ewes and 9 rams with very high lamb mortality (25%) has been considered under present study. The source of fodder for the flock is the grazing land around the farm.

Entire flock was subjected to clinical examination. Random samples of whole blood with and without anticoagulant were collected for hematology and serum biochemistry respectively. Dung samples were collected for parasitic examination.

### RESULTS AND DISCUSSION

Seven lambs, fifteen ewes and two rams in a sheep flock (Fig-1) were clinically affected and showed signs of diarrhea, weakness, loss of body weight, rough

hair coat, intermandibular edema (Fig-2), and pale mucous membranes (Fig-3). Weight loss was seen in both affected and clinically healthy sheep. Fecal examination revealed severe mixed infestation with strongyloid larve and strongyle ovae (Fig-4).

All ewes and rams were given inj. Ivermectin @  $200 \mu\text{g}/\text{kg}$  s/c, chlorpheniramine maleate @  $0.5 \text{mg}$  per kg, i/m on day I, Iron supplementation along with concentrate feed was given to the affected sheep. Lambs were treated with pyrantal pamoate @  $10 \text{mg}$  per kg b.wt orally. Clinical improvement was noticed after one week of therapy with pink mucuous membranes, subsided intermandibular edema and solid stools.

In the present study, anaemia was recorded in all the cases as the parasites feed on the blood. Anaemia may be dyshemopoitic as the parasites in the gut depresses absorption and cause various deficiencies resulting in anemia. In some cases, it may be anaplastic due to exhaustion of bone marrow caused due to chronic hemorrhages in the gut by blood sucking parasites [2].

Elevation of eosinophils in blood is common in parasitic infections. In the present case study too, eosinophilia is recorded. Eosinophils kill the parasites by degranulating i.e depositing of eosinophilic basic protein onto the parasite cuticle [3].

In the present case study, hypoproteinemia and hypoalbuminemia are recorded. Hypoproteinemia occurs due to internal plasma loss due to gastroenteritis and

diarrhea caused by internal parasites. Hypoalbuminemia in parasitic gastroenteritis occurs due to selective loss of albumin (due to its small size) in gastrointestinal disease due to internal parasites. The hypoalbuminemia of intestinal parasites is aggravated by increased albumin catabolism [4].

PGE is of considerable economic importance in grazing livestock. It is a potential welfare problem,



**Fig-1: Affected sheep flock.**

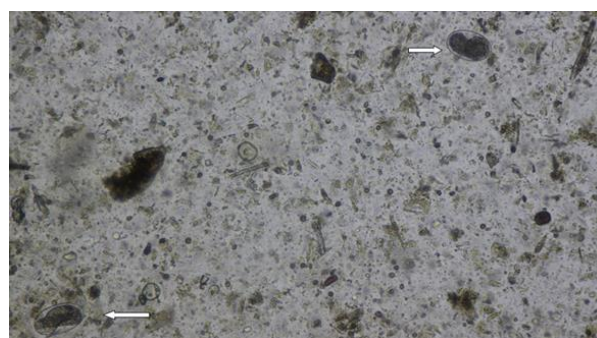
particularly on organic farms. Losses are associated with the cost of replacement stock, disruption of breeding programme, impaired productivity e.g. weight gain, wool clip, milk yield etc. the treatment of clinically affected stock e.g. drugs, labour, veterinary bills and finally, prophylaxis (prevention) e.g. drugs, labour, pasture management [1].



**Fig-3: Pale conjunctival mucous membrane.**



**Fig-2: Sheep showing intermandibular edema.**



**Fig-4: Fecal sample showing mixed infection (Strongyloid and Strongyle ova).**

**Table-1: The hematological and serum biochemical parameters of affected sheep are shown in table 1 which revealed severe anemia, eosinophilia, hypoproteinemia and hypoalbuminaemia.**

TEC (millions/cmm)	Hb (g%)	PCV (%)	TLC (thousands/cmm)	Neutrophils (%)	Lymphocytes (%)	Eosinophils (%)	Monocytes (%)	Basophils (%)	Total Protein (g/dl)	Albumin (g/dl)
1.5	3	9	10	23.5	51.25	25.25	0	0	3	1.62
±	±	± 0.55	± 0.85	±	±	±			±	±
0.11	0.31			0.64	1.29	1.63			0.13	0.24

#### REFERENCES

1. Kelkele FA, Tolossa YH, Kassa GM; Gastrointestinal helminthic infections in sheep. *Ethiop. Vet. J*, 2012; 16(1): 41-57.
2. Sastry GA; Stomach worm disease. In: *Veterinary Pathology*. 7<sup>th</sup> edition. CBS publishers, New Delhi, 2001; 731-732.
3. Cheville NF; Causes of Disease. In: *Introduction to Veterinary Pathology*. 1<sup>st</sup> edition. International book distributing Co., Lucknow, 1988; 494-497.
4. Kaneko J, Harvey JW, Bruss ML; Dysproteinemias. In: *Clinical Biochemistry of Domestic Animals*. 6<sup>th</sup> edition. Academic Press, 2008; 114-115.