DIARRHOEA IN CATTLE- A CLINICAL PERSPECTIVE

P.G. Baby &
N.P. Usha
Department of Clinical Medicine,
College of Veterinary and Animal Sciences,
Mannuthy

Diarrhoea lasting for weeks or more is one of the most common presenting complaints in bovine clinical practice, and it causes a frustrating inconvenience for their owners also. The multitude of causes and the variability of response to treatment make the diagnosis and management of chronic diarrhoea is a challenging task for veterinarians. As far as Kerala is concerned amphistomosis and schistosomosis are major causes for foul smelling profuse watery diarrhoea in cattle, but it is always misdiagnosed or under diagnosed by veterinarians and at the same time overuse of other drugs like antibiotics may aggravate the condition. So in such conditions time spent history taking like grazing pattern and nature of diarrhoea are very essential for diagnosis and effective management of such condition.

The initial step in evaluating the chronic diarrhoea is to localize the origin of the diarrhoea to either the small intestine or large intestine (Table I). Localization is vital because differences exist between small intestinal and large intestinal diseases regarding the diagnostic plan, differential diagnosis and expenses of diagnosis and treatment.

Localization should be based on a comprehensive history, not on clinical observations made during a brief hospitalization.

Table I . Clinical signs that help to localize the source of diarrhoea.

Clinical signs	***Small bowel diarrhoea***	***Large bowel diarrhoea***
Frequency of defaecation	Mild to moderate -	Moderate to severe -Urgency for defaecation
Quantity/ defaecation	Normal or Increased	Decreased
Weight loss	Common	Rare
Mucus	Absent	Present
Blood	Melena	Fresh blood / Clots of blood
Tenesmus	Absent	Present
Anal irritation / pruritus	Absent	Present
Consistency	Watery	Porridge
Volume	Small	Bulk

DIFFERENTIAL DIAGNOSIS

Once you localize the diarrhoea into small bowel or large bowel diarrhoes then you have to make a list of differential diagnosis.

I. Diarrhoea in calves < 4 weeks old.

Possible causes include.

a. Insufficient colostrums (predisposes to infection)

b. Poor quality milk replacer (the younger the calf, the more susceptible it is)

c. Collibacillosis (< 4 weeks old)

d. Salmonellosis (Very severe diarrhoea)

e. Rota virus (Usually < 10 days but can occur later also)

f. Corona virus (1 to 4 weeks)

g. Parasitic : Round worm / cryptosporidiosis (> 2 weeks), strongyloidisis, coccidiosis.

II. Diarrhoea in cattle (4 weeks to 9 months)

a. Coccidiosis (> weeks)

b. Salmonellosis

c. Yersiniosis (> 6 months)

d. Gastrointestinal parasitism (> 6 weeks)

III. Diarrhoea in catle > 9 months old.

a. Worms in stomach / intestine (Amphistomosis, schistosomosis etc0

b. Johne's disease (usually > 2 yrs old)

c. BVD (mild or sever fatal diarrhoea about a year of age)

d. Ruminal acidosis / Indigestion (after overeating carbohydrate rich feed)

e. Rare cause include – diseases of liver, kidney, CHF and abdominal tumour)

f. Non-specific — forage poisoning.

Coccidiosis: - It is a self limiting disease affecting calves during their first year of life. Bloody diarrhoea and tenesmus are the cardinal signs. Severe cold weather and other stress situation may precipitate clinical disease (Winter coccidiosis). Some animals in addition to acute dysentry show muscular tremors, opisthotonus, nystagmus or blindness (nervous coccidiosis). Tenesmus is the pathognomonic sign of bovine coccidiosis.

Amprolium @ 10 mg / kg for 5 days, Sulpha TMP @ 15 – 30 mg / kg for 5 days (preferably parenteral), are effective. In cases of severe red water dysentery and tenesmus 5% methylene blue 100 – 200 ml or tannic acid 5% 100 – 200 ml can be given as retention enema.

Strongyloidosis: - Only female worms are present in the intestine and so eggs are produced by parthenogenesis. In older animals they accumulate in subcutaneous tissue and migrate to mammary gland when lactation starts. So neonates get infection through colostrums and milk. So egg laying females are present in the intestine about one week after birth. Diarrhoea is the most common clinical signs but passage of massive number of larvae through the skin may also provoke dermatitis. So any calves (< 2 week) brought to the hospital with history of diarrhoea and loss of hair especially on thigh region gives some clues regarding the presence of strongyloidosis. Such animals can be treated with ivermectin @ 200 mg / kg b.wt. s/c or HITEK oral solution @ 4 ml / kg b.wt. or levamisol hydrochloride @ 7.5 mg / b. wt. Ivermectin provide up to 21 days of protection.

Ascariosis: - It is very common in young buffalo calves. If there is heavy worm burden animals exhibit constipation (due to blockage of worms). Some times even signs of toxaemia due to autointoxication. Other manifestations included poor coat, diarrhoea steatorrhoea (oily faeces) and anaemia or even pneumonia. Pyrantel @ 10 mg / kg is the drug of choice as it has good efficacy against both mature and adult worms. Other drugs like levamisol, febantel and even piperazine can be used for treatment but may not expel all worms. So a single antihelminthics treatment at 10 – 16 days of age using a compound with high activity against all stages give good control. Buffalo calf being having habitual constipation, a laxative should be followed with deworming (after 12 hrs.).

Colibacillosis: - acute, peracute or chronic forms. Acute stage seen in newborn animal about 1 – 2 days old, characterized by profuse watery diarrhoea with rapid peristalsis, faces become yellowish brown to grayish white or even blood streaked. A peculiar foetid odour is emitted from faeces, straining in evacuation of faces, soiling of anal and perineal region are characteristic. Chronic cases are characterized by joint ill, naval ill or pneumonia and the peracute cases by sudden death without any clinical signs. Such animals can be treated with isotonic fluids i/v and broad-spectrum antibiotics preferably having bactericidal activity.

Amphistomosis:- caused by migratory paramphistomes, a characteristic persistent fetid diarrhoea accompanied by weakness, depression, dehydration and submaxillary edemas. Invariably there will be a history of grazing in the paddy field. Mature fluke in rumen can cause recurrent bloat in adult cattle. Two doses of oxyclosanide @ 18.7 mg/ kg b wt 2 days apart or single dose of exachlorophene @ 20 mg / kg b wt is effective.

Schistosomosis: - caused by S. spindale. Some may develop concurrent infestation with amphistomosis As in the case of amphistomosis, here animal may not exhibit severe diarrhoea but plug of mucus and blood voided after passing dung. Initially the diarrhoea may be mild to moderate, but as the condition progresses there will be severe haemorrhagic enteritis. Direct examination of mucus or blood portion will reveal the presence of egg. Such animals can be treated with tartar emetic @ 1 – 1.5 i/v mg / kg b. wt. alternate

days with 3 injections.

Johne's disease: - Mainly seen in adult cows during their 2nd or 3rd calving. The most cardinal sign is diarrhoea, which may be intermittent or continuous in nature. Faeces may be dark in colour and contain bubbles.

Lactic acidosis: - Mainly seen in animal fed with highly fermentable carbohydrate without proper adaptation. Ruminal content will be fluidy so percussion of the ruminal area help in diagnosis. In severe cases animal shows watery diarrhoea with sour smell.

A DIAGNOSTIC PLAN

A through diagnostic plan must be followed to achieve an accurate diagnosis in an efficient manner and this must include

1. A detailed dietary history – change in feed, spoiled feed (aflatoxicosis), grazing on paddy field (amphostomosis and schistosomosis)

2. A thorough physical examination. It rarely identifies the underlying cause of diarrhoea, but may help to ruie out the presence of concurrent disease.

3. Rectal cytology – An increased number of neutrophils may be seen with an infectious or inflammatory condition

4. Multiple faecal / dung examination is also important because parasites are probably the most common cause of diarrhoea.

Amphistomosis – direct / Zinc sulphate floatation method

Schistosomosis – direct examination of blood / mucus of dung sample

5. Complete blood count.

TREATMENT

Apart from specific treatment, animal should be treated symptomatically also. The basic pathophysiologic changes in acute diarrhoea are characterized by

a. Dehydration

b. Electrolyte imbalance

c. Reduced circulating blood volume

d. Reduced perfusion to vital organs

e. Metabolic acidosis

So fluid therapy is paramount in treating diarrhoeic cases. In sever cases of acidosis 5 % sodium bicarbonate @ 5 – 7 ml/kg b wt i/v followed by electrolyte solution (RL) in sufficient quantities based on % of dehydration.

ie (% dehydration x Body wt in Kg x 10) = liters of fluid.1 gm of KCl added to each liter of fluid.

Other treatment included

a. Intestinal protectants – kaolin pectin.

b. Anti motility drugs – opiates

c. Anti secretory drugs – loperamide, aropine, PG inhibitors.

In severe cases of amphistomosis and schistosomosis animal may not respond to specific therapy also. So combination of drugs containing metronidazole, nitrofurazone, loperamide etc are very useful for control of diarrhoea.

CONTROL

1. Reduce infection pressure by controlling population density.

2. Improve nonspecific resistance by proper colostrum feeding of neonatal farm animals.

3. Vaccinate for those disease for which there is an effective vaccine.

4. Minimize managemental and environmental stressors.

5. Proper monitoring of herd health. ❑

COVER PHOTOGRAPH

Courtesy to Malayala Manorama,
Palakkad Edition, 3rd June 2005
Photography by Rajan M Thomas,
Farm Journalism Photography Award Winner-2005