Occurrence, clinical signs, postmortem lesions and etiology of enterotoxaemia in Black Bengal goats

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Abstract

A year round study was carried out to investigate the etiology, clinical signs, postmortem lesions and occurrence of naturally occurring enterotoxaemia in Black Bengal goats. Sixteen goats of different age and sex died in different seasons with sigh associated with enterotoxaemia made the materials of this study. Accidental access to large amount of concentrate was noted as one of the predisposing factors although few cases were reported to occur without known diet change. Younger animals (50%) and males (62.50%) were found more prone to the disease and it was likely to be more prevalent during winter (50%) followed by at rainy season (31.25%) and summer (18.75%). Diarrhoea (81.25%), dullness (56.25%), drooping of the ears (50%), anorexia (43.75%), drooping of the ears (50%), anorexia (43.75%), fluid filled intestines (87.50%), etc. were most common post mortem lesions found. A few cases showed lesions on heart (31.25%), brain (25%) and/or liver/spleen (18.75%) but no lesion was found on kidney. Thus the so called ‘pulpy kidney’ lesion was absent. Intestinal contents were subjected to conventional bacteriological culture based methods to identify the causal agents. Based on the morphological, cultural and biochemical properties the causal agent was identified as Clostridium perfringens. Despite the study was carried out at certain area it showed a clear picture of goat enterotoxaemia in terms of etiology, clinical signs, postmortem lesions and occurrence of goat enterotoxaemia in Bangladesh.

Key words: Enterotoxaemia, Etiology, Cl. Perfringens, Clinical signs, Postmortem lesions, Occurrence.

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Introduction

The goat called the "poor man’s cow" is the second most important livestock in Bangladesh which provides 23% milk and 27% meat production in the country amounting to 450 thousands metric tons milk and 105 thousands metric tons meat respectively\(^1\). Although, goat rearing is easy, less expensive, less laborious and highly profitable business, it is being seriously hampered due to variable disease problems. Enterotoxaemia caused by *Clostridium perfringens*, is one of the most important diseases of small ruminants that causes a great threat to the sheep and goat industry all over the world. Most developing countries in the world such as Bangladesh require improvement to the productivity of their livestock etc or. Increased productivity of small ruminants, these condmost important domesticated animals in the country, is restricted by various factors. Infectious bacterial disease is one of the most important factors that hinder the growth and productivity of small animal industry. Among the bacterial diseases, enterotoxaemia causes significant loss to sheep and goat industry. Caprine enterotoxaemia occurs world wide in goats of any age over two weeks\(^2\) including Bangladesh\(^3\). In Bangladesh, some confound reports are available from Rahman et al\(^4\), Dewan et al\(^5\), Rahman\(^6\), Ehsan\(^7\) and Islam\(^8\) who mainly worked on diarrhoeic diseases of cattle and revealed that *C. perfringens* as a causal agent of diarrhoeal diseases but detailed reports are not available for caprine enterotoxaemia which constitutes a great threat to the successful goat production and its industry.

*C. perfringens* produces disease in sheep and goats, most of which are generically called enterotoxemias. This microorganism is classified into five types (A, B, C, D and E) according to the production of four major toxins, namely alpha, beta, epsilon and iota\(^9\), 10, 11. *C. perfringens* can be a normal inhabitant of the intestines of most animal species\(^9\) including humans\(^12\) but when the intestine is altered by sudden changes in diet or other factors, *C. perfringens* proliferates in large numbers and produces several potent toxins\(^13\). History, clinical signs and gross post–mortem findings are useful tools in establishing a presumptive diagnosis of enterotoxaemia by *C. perfringens* in sheep and goats\(^13\), although no definitive diagnosis of the disease can be made without laboratory confirmation.

In this paper, an attempt has been made to boost up the present knowledge regarding the disease by compiling the clinical and post mortem signs of naturally occurring goat enterotoxaemia together with the prevalence in relation to age, sex and season and etiology.

Materials and Methods

Collection of history, clinical signs and Postmortem lesions

Sixteen goats died between November 2004 and November 2005 with signs associated with enterotoxaemia in Bangladesh Livestock Research Institute (BLRI) goat farm made the materials for the study. The history and clinical signs showed by the goats before death were recorded carefully in a preset format. Dead animals were subjected to immediate thorough post mortem study as par the standard procedure and lesions