Dhakeri-Bange Syndrome in Goats: A Clinical-laboratory Investigation

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ABSTRACT

An outbreak of syndrome of unknown etiology associated with the feeding of moldy dry forage and green fodder among goats in Dhakeri village of Banke District on October-November 2008. Goats suddenly became ill with symptoms of knuckling of the fetlocks of the pelvic limbs, with no apparent ataxia or flexor weakness. Weight bearing was possible while the digits were extended, but with knuckling, weight was supported on the dorsal surface of the foot. The more severely affected goats were paraplegic and recumbent. Anorexia, apathy, diarrhea and ruminal stasis, flaccid posterior paralysis, hindlegs stretched forward both side of abdomin, paralysis of all four legs, head bented to sides, aimlessly head and rear shaking .On clinical examination based on history these goats were provisionally diagnosed as Dhakeri-Bange as being called locally and Endemic Mycotic polyneuropathy syndrome as seen first time in Nepal due to moldy forage/fodder poisoning in natural pasture were treated with Antidegnala liquor. On mycological and microbiological examination of tissue samples from post-mortem of dead goat and forage/ fodder samples from pasture and goats feeding stalls on respective medium revealed the growth of fungal pathogens like Aspergillus and Penicillium spp with E. coli. These results provide circumstantial evidence that feeding of moldy forages and green fodder leaves infected by Penicillium and Aspergillus spp may cause outbreaks of a systemic Mycosis in these goats.

***Keywords**: Moldy forage, Green fodder, Penicillium, Aspergillus Spp, Fungus, Mycoticpolyneuropathy, Banke, Antidegnala liquor.*

INTRODUCTION

During the autumn season (October-November) of 2008, around 300 goats raised by farmers of different villages in Banke districts of Nepal started showing paralytic symptoms like Kumri and were treated with the preparation of Diethylcarbamazin but disease did not subside. The goats included in this study had knuckling of the fetlocks of the pelvic limbs, with no apparent ataxia or flexor weakness. Weight bearing was possible while the digits were extended, but with knuckling, weight was supported on the dorsal surface of the foot. The more severely affected goats were paraplegic and recumbent. The

syndrome was consistent with sciatic or peroneal nerve disease. The paraplegic goats also have had a component of femoral nerve involvement. A field and clinical laboratory investigation was initiated to find out the cause of disease and to provide the appropriate curative and preventive measure.

FINDINGS

Clinical findings

Clinical examination of goats showed that animals were exhibiting the symptoms of anorexia, ataxia, diarrhea, dullness, dysmetria, generalized weakness and were found to be in the various stage of polyneuropathic condition. Besides, knuckling of the fetlocks of the pelvic limbs with no apparent ataxia or flexor weakness were found. Weight bearing was possible while the digits were extended but with knuckling weight was supported on the dorsal surface of the foot similar to reported by Dr. Maurice E. White 2008, and ruminal stasis, Schneider DJ, et. al. (1985). R. W. Medd, et. al. (2008), L. W. Whitlow and W. M. Hagler, Jr. (2008).

Post-Mortem findings

Postmortem examination of all 16 goats showed mild focal erosions to severe, diffuse, coagulative necrosis of the mucosa in the rumen, reticulum and omasum; and congestion and hemorrhages in the abomasum. Liver was shrunken with pale to yellowish discoloration

with bile filled, distended bladder pin point hemorrhage in kidney, and small intestine with excessive mucus. These lesions were similar to lesions experimentally induced by Schneider DJ, et.al. (1985); Dhama et.al. (2007), R. W. Medd, et.al. (2008); Hussein S. Hussein, and Jeffrey M. Brasel (2001).

Microbial/mycobial culture examination of tissue samples

On mycological and microbiological examination of tissue samples from post-mortem of dead goat and forage and fodder from natural pasture on respective medium revealed the growth of fungal pathogens that include *Aspergillus* and *Penicillium* spp with *E. coli* similar to the findings of Karki et. al. (2008); C. Wendell Horne (2008); Sabreen, M. S. and Zaky, Z. M. (2001). All nasal and rectal swabs from sick and dead animals tested for PPR with pen-side test turned out to be negative.

Treatment of clinically affected goats and remaining herds

All goats that were showing clinical symptoms were treated with Antidegnala liquor (s.r) 2 ml s/c followed by 1 ml daily for next four days. Similarly, rest of animals in herds were provided with same drugs at the dose rate of 1 ml orally for four days. Those goats received the treatment as earliest time recovered promptly. The delayed treated goats too recovered but took longer duration. Similar longer recovery time was reported in earlier findings of Karki et.al. (2008).

RESULTS AND DISCUSSION

As during warm humid climate of tropics and subtropics favors growth of mold and fungus in feed grains and fodder especially after heavy monsoon rain feeding of exclusively such grain to livestock and poultry seems to cause the detrimental effect in the health these animals. As in this investigation clinical signs of anorexia, apathy, diarrhea and ruminal stasis and Clinical pathological findings included mild focal erosions to severe, diffuse, coagulative necrosis of the mucosa in the rumen, reticulum and omasum and congestion and hemorrhages in the abomasum. Liver with shrunken appearance pale to yellowish discoloration with bile filled distended bladder pin point hemorrhage in kidney, small intestine with excessive mucus. On mycological and microbiological examination of tissue samples from post-mortem of dead goat on respective medium revealed the growth of fungal pathogens like Aspergillus and Penicillium spp with *E. coli*. These results provide circumstantial evidence that feeding of moldy maize grain and green fodder leaves infected by Penicillium and Aspergillus spp and timely use of Antidegnala liquor has controlled the further mortality in sick goats and when remaining animals in herd there was no further appearance of syndrome indicative of the above polyneuropathic syndrome was caused by a systemic Mycosis in these goats need to be looked into.

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