MANAGEMENT OF BOVINE CUTANEOUS PAPILLOMATOSIS WITH IVERMECTIN IN FARM BRED CALF CROPS OF WEST BENGAL

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ABSTRACT

Incidence of infectious bovine cutaneous papillomatosis in farm bred calf crops of tropical West Bengal during 2008-2010 and its successful therapeutic management, with injectable Ivermectin is reported. Effects of parenteral Ivermectin administration @ 1ml/50 kg body wt. by S/C route in three consecutive doses at 15 days interval were clinically evaluated on 36 calves. Hundred per cent clinical recovery (n : 36) was observed in treatment group whereas persistence as well as different stages of papillomatous growth without regression or self cure was observed in (n : 10) control group.

KEY WORDS: Bovine papillomatosis, Warts, Ivermectin, Calves

INTRODUCTION

Bovine papillomatosis is caused by six different serotypes of epitheliotropic Bovine papilloma viruses (BPVs) having double stranded DNA as viral genome. Amongst the cutaneous affections as encountered in bovine calf crops, benign cutaneous neoplasm (tumours) or warts caused by BPVs form a most common clinical entity. Different methods have been used to treat bovine papillomatosis with varying success. Although numerous cases of bovine papillomatosis have occurred among different breeds of bovine calf populations in West Bengal over past years but documented data regarding diagnosis and treatment are still scarce. Hence a study was undertaken to evaluate the effect of parental administration of Ivermectin to the affected calves.

MATERIALS AND METHODS

Survey of bovine papillomas with special emphasis to screening of cutaneous papillomatosis in calves was conducted in organized dairy farms and Goshalas located in new alluvial soil zone of tropical West Bengal, precisely in the districts of Nadia, North 24 Parganas and Howrah.

Clinically 46 calves (31 male and 15 female) of different breeds, age, sex and weight, were histopathologically diagnosed as papillomatosis formed the materials of our study. In the present study clinically low to moderate number of warts were observed on head, eyelids, ears, neck, brisket, shoulder, thorax, limbs, paragenital area and ventral abdomen. Injectable Ivermectin (Trumectin ® Zydus AHL) was administered to 36 calves (n : 36) forming treatment group by subcutaneous route at the dose rate of 1ml/50 kg body weight for 3 occassions at 15 days interval and clinical recovery was assessed till 90 days and rest 10 calves (n : 10) forming control group received subcutaneous injection of normal saline @10 ml at 15 days interval as per treatment mode. Clinical efficiency of treatment was monitored for six months.

Cutaneous warts biopsy materials were aseptically collected from cow calves and representative specimens were fixed in 10% formalin for histopathological studies. The paraffin embedded tissues were cut into 5 micron thin section and stained with Haematoxylin and Eosin and examined by light microscopy.

RESULTS AND DISCUSSION :

In the present study, 100% success was obtained by the treatment of bovine papillomatosis with parenteral ivermectin therapy in mixed breed of calf crops including cross bred calves and no recurrence was observed in treatment group during 6 months. Complete clinical cure or total healing, regression or sloughing of warts occurred during 45 to 90th days post administration of Ivermectin. Healing was evaluated by macroscopic examination (decrease in diameter, colour changes, dryness and dropping of dead tissue) where three (n : 3) calves (8.33%) in treatment group I at 45th day, seven (n : 7) calves (19.44%) at 60th day, twenty (n : 20) calves (54.44%) at 85th day and further six (n : 6) calves (16.66%) at 90th day showed complete remission. However, none of the calves from the control group(Gr.-II) revealed remission rather exhibited warts progression at various stages of development with unsighty appearance and distressing to animals.

Present study indicates that bovine cutaneous papillomatosis is widely prevalent in West Bengal, affecting a good number of young calves even in organized dairy farms . Microscopic changes typical of fibropapillomas were observed in all the cases of cutaneous papillomas revealing epidermal hyperplasia, acanthosis and hyperkeratosis alongwith elongated growth of papillary projections extending into dermis. Similar changes were also observed by Gupta et al., (1989). Although there are many treatment modalities for warts remedy or regression, no agreement has been achieved on the method to be used for the treatment of papillomas with sure success (Cimtay et al.,2003). Venugopalan (2000) and O'Connor (2001) have suggested remedial measures for removal of warts such as use of autogenous vaccine, wart ennucleation, burning with hot iron or eraser, ligation and surgical removal of wart (excision) with surgical knife, application of salicyclic acid ointment, dimethyl sulfoxide ointment and potential caustics etc. Medicinal treatment with Anthiomaline, Antimosan, Fowler's solution, thuja (Homeopathic medicine) etc. are in practice but results are not always satisfactory. Now-a-days use of some drugs causing non-specific immune stimulation have been found promising in clinical recovery or regression of warts. 100 per cent success was achieved in the treatment of bovine papillmatosis with Levamisole (Drinayev et al., 2004). In the present study,hundred per cent clinical recovery was obtained while treating warts or cutaneous papillomatosis in calves with three consecutive dose of Ivermectin administration by subcutaneous route (S/C) at 15 days interval at its normal dose rate i.e. 1ml/50 kg body weight. Regression or healing of warts could have occurred due to immune modulatory and antitumour effect of Ivermectin. Our findings are consistent with Borku et al.,(2007) and Drinayev et al.,(2004), who used Ivermectins against viral papillomatosis or virus induced warts. Hence, it can be concluded that usage of Ivermectin is safe and cheap alternative treatment option for papillomatosis in calves in place of surgical or cryosurgical approaches (Venugopalon loc. cit.; Olson, (1983) and Smith, (1986).

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