

IN VIVO INVESTIGATION OF BOVINE CUTANEOUS PAPILLOMATOSIS WITH HOMEOPATHIC PREPARATIONS

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ABSTRACT

This investigation was carried out to determine the effects of thuza and antim crud (Homeopathic preparations) on bovine cutaneous papillomatosis/wart. Nine calves of one to two and a half years age and of both sexes affected with cutaneous papillomatosis were randomly divided into three equal groups (group I, group II and group III) for this experiment from March 2002 to February 2003. Each calf of group I was first administered with 15 globules sulphur with a potency of 200-power once orally. This was followed after 7 days with 50M (M = 1000-power) thuza at the dose rate of 10 globules twice daily orally for a period of three weeks. The calves of group II were administered with sulphur and antim crud at the same dose, potency, route and duration, respectively and the calves of group III were kept as untreated control. Papilloma tissues were collected prior to treatment and at the sixth week of treatment and they were subjected to histopathological examination. Thuza and antim crud with concurrent use of sulphur were found effective in curing bovine cutaneous papillomatosis with a rate of 66.66% (4/6). Little or no reduction in size of the papillomas was observed within the first two weeks of treatment in both the treated groups (group I and group II). Thereafter, miniature size sessile and pedunculated papillomas started drying with the gradual reduction in size that fell leaving hairless areas at the end of fourth week. By the eighth week there was complete cure of papillomas. One calf of each treated groups (group I and group II) affected with large papillomas (5 X 7 cm) were not completely cured. Microscopic examination of regressive papillomas at sixth week of treatment showed cellular necrosis. Growth recurrence was not observed within one month of recovery. In the untreated control group (group III) the number and size of papillomas increased. Therefore, this line of treatment may be practised for the treatment of bovine papillomatosis.

Key words: Bovine, cutaneous papillomatosis, homeopathic, thuza, antim crud

INTRODUCTION

Papillomatosis, commonly known as wart, is a viral disease of cattle affecting usually the young animal (Moulton, 1990). Cutaneous papillomatosis is generally a cauliflower like growth on external surface of the body being sessile (broad based) or pedunculated (stalked) structure. In human medicine, the homeopathic doctors using some homeopathic preparations (thuza, causticum, antim crud etc) along with sulphur for the treatment of tumors in our country and abroad (Dighe, 1992; Prakash, 1993; Veena, 2001) as well claiming complete recovery of the disease. In veterinary medicine, homeopathic preparations are now being used in treating and controlling of mastitis in cow (Spranger, 1998; Nowotzin, 2001), treating papilloma of dog (Umakanthan, 2002), to increase the broiler performance (Samarth *et al.*, 2002) and so on with variable result. Keeping these views in consideration this experiment was planned to test the efficacy of two homeopathic preparations (thuza and antim crud) commonly used as antipapilloma drugs against bovine cutaneous papillomatosis.

MATERIALS AND METHODS

Nine calves of both sexes and age ranging one to two and a half years affected with cutaneous papillomatosis were selected from nearby villages of Bangladesh Agricultural University during the period of March 2002 to February 2003. The calves were randomly divided into three groups (group I group II and group III) and each group consisted of three calves. Each calf of group I was first administered with 15 globules sulphur of 200-power once orally. This was followed after seven days with 50M (1000-power) thuza at the dose rate of 10 globules orally twice daily for a period of three week. The calves of group II were administered with sulphur and antim crud at the same dose, potency, route and duration and the calves of group III were kept as untreated control. The papilloma tissues were collected prior to starting of treatment and at sixth week of treatment. The collected tissues were fixed in 10% neutral buffered formalin, processed, sectioned, stained following standard procedure (Luna, 1968) and examined under light microscope. The calves were observed for three month.

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RESULTS AND DISCUSSION

Thuza and antim crud along with sulphur were found effective in treating bovine cutaneous papillomatosis with the success rate of 66.66% (Table 1). Little or no reduction in size of papilloma was observed within the first two week of treatment in both the treated groups (group I and group II). From the third week the papillomatous nodule started drying with gradual reduction in size. The smaller papillomas started falling leaving hairless areas at the end of fourth week. At the end of eighth week there was complete cure of the miniature size sessile and pedunculated warts. One calf of each group affected with large warts was not completely cured. These large warts showed indication of necrosis and were in the process of falling. Growth recurrence was not observed within one month of recovery. Grossly, the warts were dried and left a great thickness of epidermis upon fixation. Microscopic examination of regressive papilloma collected at sixth week of treatment revealed cellular necrosis. In the untreated control group (group III) the number and size of warts increased.

Table 1. Rate of therapeutic success of thuza and antim crud on bovine papillomatosis

Group	No. of calf	Drugs, dose, route and duration of administration	No. of calf cured	Rate of calves cured
I	3	15 globules sulphur of 200-power once orally followed after 7 days with 50M thuza at the dose rate of 10 globules twice daily orally for a period of 3 weeks	2	66.66% (2/3)
II	3	15 globules sulphur of 200-power once orally followed after 7 days with 50M Antim crud at the dose rate of 10 globules twice daily orally for a period of 3 weeks	2	66.66% (2/3)
III	3	No drugs, kept as untreated control	0	0

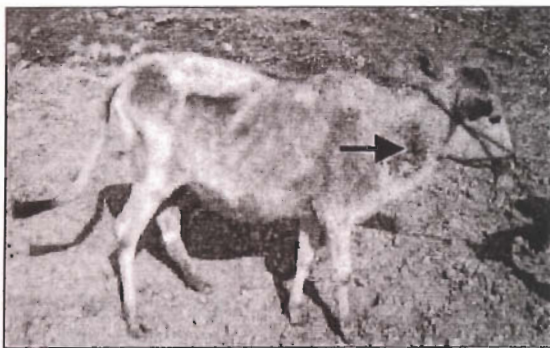


Fig. 1. Cauliflower-like nodular cutaneous papilloma (arrow) at the neck of calf before starting of treatment.

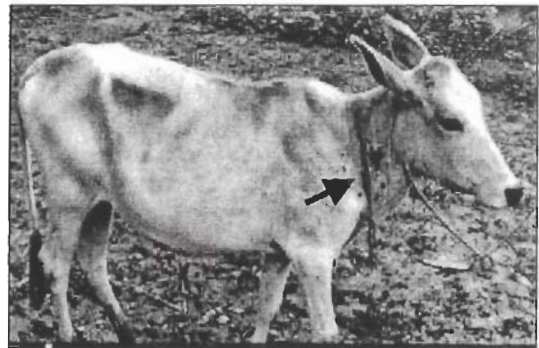


Fig. 2. Papilloma after treatment with thuza at the dose of 15 globules sulphur of 200-power once orally followed after 7 days with 50M thuza at the dose rate of 10 globules twice daily orally for a period of 3 weeks. Showing the regression of papillomatous nodule is indicated by reduction in size and falling is indicated by hairless areas (arrow).

The homeopathic preparations demonstrated a good result on bovine cutaneous papillomatosis but took comparatively longer duration to cure the lesions. This finding simulated the previous report of Prakash (1993) and Soni and Parekh (1977). This line of treatment has been observed more effective in small pedunculated papilloma than sessile papilloma of long standing. Probably more prolonged treatment with higher potency might be advisable. Failure of two calves to respond to treatment may be due to differences in the nature of lesion or strain of infective virus. Radostits *et al.* (1998) also described poor response of low, flat sessile wart to vaccination.

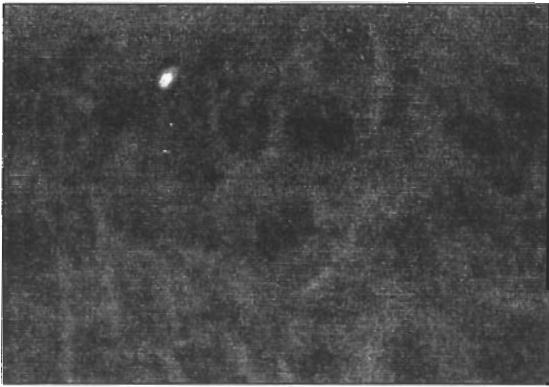


Fig. 3. Histologic features of bovine cutaneous papilloma before starting of treatment (H & E, X830).

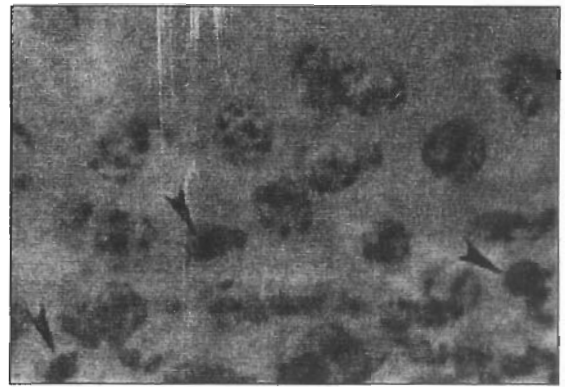


Fig. 4. Histologic features of bovine cutaneous papilloma after treatment with 15 globules sulphur of 200-power once orally followed after 7 days with 50M thuza at the dose rate of 10 globules twice daily orally for a period of 3 weeks. Showing the necrotic changes indicated by clumping of nuclear chromatin (arrow) and reduction in size of the cell (H & E, X830).

Though the authors were not aware of the exact mechanism how the homeopathic preparations under reference acted on papillomas but believe that the preparations may play an important role in cutting down the blood supply of the papillomatous growth like anthiomalin. It may also be due to the stimulation of immune system that killed the papillomatous cell by unknown mechanism. Thuza and antim crud were equally effective in curing bovine cutaneous papillomatosis and it was hard to grade them for their wart enucleating properties.

Microscopic finding of clumping of nuclear chromatin, reduction in size of cells and extensive thickening of keratin layer simulates the characters of necrotic cells (Jones *et al.*, 1997). As papillomatosis is a self regressing disease taking 5-6 months or even 18 months (Radostits *et al.*, 1998), and as the necrotic changes took place at sixth week of treatment so there are reasons to believe that the changes occurred due to action of drug, not by self regression.

Therefore, this line of treatment may be practised for the treatment of bovine papillomatosis.

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