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 thuja and arsenic crud (Homeopathic preparations) on bovine cutaneous papillomata in vivo. Nine calves of one to two and a half years age and of both sexes affected with cutaneous papillomata 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 thuja (N=100-power) thuja 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 arsenic 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. Thuja and arsenic crud with concurrent use of sulphur were found effective in curing bovine-cutaneous papillomata with a rate of 66.67% (4/6). Little or no reduction in size of the papilloma was observed within the first two weeks of treatment in both the treated groups (group I and group II) whereas, minimal size reduction and post necrotic papillomas were observed during the gradual reduction in size that full healing before areas at the end of fourth week. By the eighth week there was obvious cure of papilloma. One calf of each treated group (group I and group II) affected with large papilloma (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 papillomata increased. Therefore, this line of treatment may be practiced for the treatment of bovine papillomatis.

Key words: Bovine, cutaneous papillomatis, homeopathic, thuja, arsenic crud

INTRODUCTION

Papillomata, commonly known as warts, is a viral disease of cattle affecting usually the young animal (Moulton, 1990). Cutaneous papillomatis is generally a cauliflower like growth on external surface of the body being sensitive (broad based) or pedunculated (stalked) structure. In human medicine, the homoeopathic doctors using some homoeopathic preparations (thuja, canthicum, arsenic crud etc) along with sulphur for the treatment of warts in our country and abroad (Dighie, 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 (Springett, 1999; Nowotarski, 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 (thuja and arsenic crud) commonly used as antipapilloma drug against bovine cutaneous papillomatis.

MATERIALS AND METHODS

Nine calves of both sexes and age ranging one to two and a half years affected with cutaneous papillomatis 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 SIM (1000-power) thuja 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 arsenic 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 staring 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

Thrusa and anthelmintic drugs were found effective in treating bovine cutaneous papillomavirus with the success rate of 66.66% (Table 1). Little or no reduction in size of papillomas was observed within the first two weeks of treatment in both the treated groups (Group 1 and Group II). From the third week the papillomavirus nodules started drying with gradual reduction in size. The smaller papillomas started falling leaving hairless areas at the end of fourth week. As the end of eighth week there was complete cure of the miniature size papilloma and polycauliculated warts. One calf of each group affected with large warts was not completely cured. These large warts showed ulceration 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>
<thead>
<tr>
<th>Group</th>
<th>No. of calf</th>
<th>Drugs, dose, route and duration of administration</th>
<th>No. of calf cured</th>
<th>Rate of calves cured</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>3</td>
<td>15 globules sulphur of 200 power once orally followed after 7 days with 50M thym at the dose rate of 10 globules twice daily orally for a period of 3 weeks</td>
<td>2</td>
<td>66.66% (2/3)</td>
</tr>
<tr>
<td>II</td>
<td>3</td>
<td>15 globules sulphur of 200 power once orally followed after 7 days with 50M anthelm at the dose rate of 10 globules twice daily orally for a period of 3 weeks</td>
<td>2</td>
<td>66.66% (2/3)</td>
</tr>
<tr>
<td>III</td>
<td>3</td>
<td>No drugs; kept as untreated control</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

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

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

The homoeopathic preparations demonstrated a good result on bovine cutaneous papillomavirus but took comparatively longer duration to cure the lesions. This finding simulated the previous report of Parkash (1993) and Sues and Panchi (1977). This line of treatment has been observed more effective in small pedunculated papillomas than sessile papillomas 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 in strain of infective virus. Dalesinis et al. (1999) also described poor response of low Bovine wart to vaccination.
Though the authors were not aware of the exact mechanism by which the homoeopathic preparations under reference acted on papilloma but believe that the preparations may play an important role in cutting down the blood supply of the papillomatous growth like antiinflammatory. It may also be due to the stimulation of immune system that killed the papillomatous cell by unknown mechanism. Thiaz and amni crude were equally effective in curing bovine cutaneous papillomatus and it was hard to grade them for their wart eradicating properties.

Microscopic finding of clumping of nuclear chromatin, reduction in size of cells and extensive thickening of keratin layer simulates the characters of neocytic cells (Jones et al., 1997). As papillomatus is a self regressing disease taking 5-6 months or even 18 months (Radecki et al., 1998) and as the neocytic 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 practiced for the treatment of bovine papillomatus.

REFERENCES