



RESEARCH ARTICLE

SUCCESSFUL MANAGEMENT OF PHOTOSENSITIZATION DUE TO LANTANA POISONING
IN A HOLSTEIN FRIESIAN COW

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ABSTRACT

A Holstein Friesian male cattle consumed *Lantana* leaves 2 days back and was presented with the symptoms of dullness, depression, anorexia, dry parchment like skin, lethargy and icteric mucous membrane. It was diagnosed as a case of photosensitization due to consumption of *Lantana camara*. However, the animal was treated with 500 ml of 5% dextrose normal saline mixed with 15 ml of B complex Vitamin supplements intravenously, Meloxicam @ 0.5 mg/kg intramuscularly and Avil @ 0.5 mg/kg intramuscularly for a week. Livotas syrup was advised to be given orally once a day @ 30ml for one month. External antiseptic ointments were applied daily for skin lesions. The duration of therapy for the complete clinical recovery was 30 days.

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INTRODUCTION

Photosensitization is a biophysical phenomenon which takes place when skin becomes sensitized to certain wavelengths of sunlight, particularly ultraviolet range of the spectrum, due to the presence of a photo-dynamic agents in the skin causing a sunburn (Andrews *et al.*, 2004). It is primarily a condition of sheep, cattle and horses but other species may also be susceptible (Witte and Curry, 1993). Cattle are the most commonly affected species in the field (Pass, 1986). Photosensitivity in grazing herbivores is either primary or secondary photosensitization (Knight and Walter, 2001). Primary photosensitization occurs when a 'photodynamic' agent is ingested, injected or absorbed through the skin. These compounds are circulated around the body via the bloodstream and accumulate in the skin, inducing photosensitization when the animal is exposed to ultraviolet light. Secondary (hepatogenous) photosensitization occurs due to liver or bile duct damage, most often as a result of ingestion of hepatotoxic plants such as *Lantana camara*.

The present study presents a case of photosensitization due to consumption of leaves of *Lantana*.

History and observations

A Holstein Friesian male cattle aged 2 years was presented to the Veterinary dispensary of Kadapa district with the symptoms of dullness, depression, lethargy, anorexia, icteric mucous membrane. Clinical examination revealed dry parchment like skin in the non pigmented areas (Fig. 1) and sloughing off of the skin. Animal had a history of consuming *Lantana* leaves 2 days back. Upon physical examination, the temperature, pulse and respiration (TPR) were within normal range. Skin scrapings and tape impression smears were negative for mites, bacterial and fungal infection. Faecal sample was found negative for parasitic ova.

RESULTS

The owner was advised not to allow animal to graze in sunlight and to place in shade. The animal was treated with 500 ml of 5% dextrose normal saline intravenously mixed with 15 ml of B complex Vitamin supplements (Tribivet), Meloxicam @ 0.5 mg/kg intramuscularly and Avil @ 0.5 mg/kg intramuscularly for 1 week.

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Fig. 1. Dry and parchment like skin in the non pigmented areas

Along with above, syrup Livotas @ 30ml orally once a day was advised to be used for 1 month. External antiseptic ointments were applied daily. After 3 weeks, the animal showed improvement in the skin condition and mucus membranes. However, complete recovery was obtained after 1 month.

DISCUSSION

Lantana camara is one of the ten most toxic weeds in the world which causes hepatotoxicity and secondary photosensitization in grazing cattle due to toxic principle lantadene. No specific drug will prevent the occurrence of photosensitization after a photodynamic agent is eaten. The symptoms must be treated as they appear. Early detection of symptoms is the key to minimize effects of the disease on the animal. When Lantana is consumed, breakdown of chlorophyll by microorganisms present in the gastrointestinal tract will produce phylloerythrin (photosensitizing agent) and the capacity of the liver to excrete phylloerythrin is impaired (Haargis and Ginn, 2007). The accumulation of phylloerythrin in the liver will cause hepatic injury and result to liver enzyme leakage (Cynthia, 2005). Damaged liver cannot properly metabolize phylloerythrin, which then accumulates in peripheral blood.

Circulating phylloerythrin causes the photosensitization reaction in nonpigmented skin (Haargis and Ginn, 2007). The recommended treatment for hepatogenous photo sensitization is removal of direct solar exposure (Radostits *et al.*, 2007). This was effective since the skin lesions disappear, and the appetite and body condition of the affected animals and returned to normal after 30 days as also observed in the present case. Symptoms of jaundice and photosensitization are seen within 2 days following consumption of *L.camara*. Similar findings were also observed in the present study. The triterpenes shown to be associated with hepatotoxicity in the field are lantadene A (primarily), lantadene C and icterogenin (McKenzie, 2012). The successful outcome of this case suggests that early intervention and treatment is important for better prognosis of the case.

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