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R Ravi

Department of Veterinary
Clinical Medicine, Veterinary
College and Research Institute,
Namakkal, Tamil Nadu, India

G Vijayakumar

Department of Veterinary
Clinical Medicine, Veterinary
College and Research Institute,
Namakkal, Tamil Nadu, India

S Sivaraman

Department of Veterinary
Clinical Medicine, Veterinary
College and Research Institute,
Namakkal, Tamil Nadu, India

K Mohanambal

Department of Veterinary
Clinical Medicine, Veterinary
College and Research Institute,
Namakkal, Tamil Nadu, India

B Sudhakara Reddy

Department of Veterinary
Clinical Medicine, Veterinary
College and Research Institute,
Namakkal, Tamil Nadu, India

Correspondence

R Ravi

Department of Veterinary
Clinical Medicine, Veterinary
College and Research Institute,
Namakkal, Tamil Nadu, India

Successful medical management of atrazine (Herbicide) poisoning in a heifer cow: A case report

R Ravi, G Vijayakumar, S Sivaraman, K Mohanambal and B Sudhakara Reddy

Abstract

A two year old Holstein Friesian cross bred heifer was presented to the Veterinary College and Research Institute hospital, Namakkal with the history of having consumed water from a pail of water mixed with atrazine herbicide powder instead of mineral mixture. Clinical examination revealed salivation, staggering gait, hyperesthesia, shivering, blood mixed diarrhea and frequently lying down and getting up. Haematobiochemical examination revealed hyperglycemia and glucosuria. The cow was administered activated charcoal, atropine sulfate, ranitidine and fluid therapy for three days and the cow had uneventfully recovery following therapy.

Keywords: Atrazine, hyperesthesia, activated charcoal and atropine sulfate

Introduction

Atrazine is a triazine herbicide, which is one of the most commonly used group of herbicide in agricultural industry. This paper reports clinical findings and successful management of atrazine poisoning in a heifer.

Case history and observation

A two year old Holstein Friesian cross bred heifer was presented with ptyalism to Veterinary College and Research Institute hospital, Namakkal. The owner of the cow had unknowingly mixed one handful of atrazine herbicide powder into the drinking pail of water instead of mineral mixture. Clinical Examination revealed salivation, staggering gait, hyperesthesia, shivering, frequently lying down and getting up and blood mixed diarrhea. (Fig: 1-2). Haematobiochemical examination revealed hyperglycemia and glucosuria while other parameters were within normal range. Rumen fluid examination revealed dead protozoa.

Treatment and Discussion

The cow was administered with activated charcoal (@ 1gm/kg body weight orally), atropine sulfate (@ 0.4mg/Kg body weight intravenously one third of drug given subcutaneously) twice daily, ranitidine (@0.5 mg/kg body weight intramuscular) and Ringer's lactate (@10ml/kg body weight intravenous) for 3 days. Rumen cud transplantation was done on every morning for three days.

Kobel *et al.*, (1985) [2] reported that acute animal triazine herbicide poisoning results in weakness, ataxia, increased body temperature, severe diarrhoea, respiratory distress, hepatic-renal injury and finally death. Atrazine has more acute toxic effects on ruminants than rodents. In one study, two doses of 250 mg/Kg caused death in both sheep and cattle (IPCS, 1990) [1]. Gastrointestinal symptoms are the most common manifestations after oral ingestion of atrazine. It causes erosion of the gastrointestinal tract, haemorrhage and produce severe abdominal pain. There is no specific antidote for atrazine toxicity and treatment is supportive. Clinical features of atrazine toxicity include dyspnea, muscle atony, ataxia, paraplegia, depression, hyper excitability, ptyalism and diarrhoea. Symptomatic treatment with adsorbent (activated charcoal), gastric demulcent, diuretics and tranquilizer are used as there is no antidote (Lorgue *et al.*, 1996) [3].



Fig 1: Cow accidentally fed with atrazine exhibit salivation

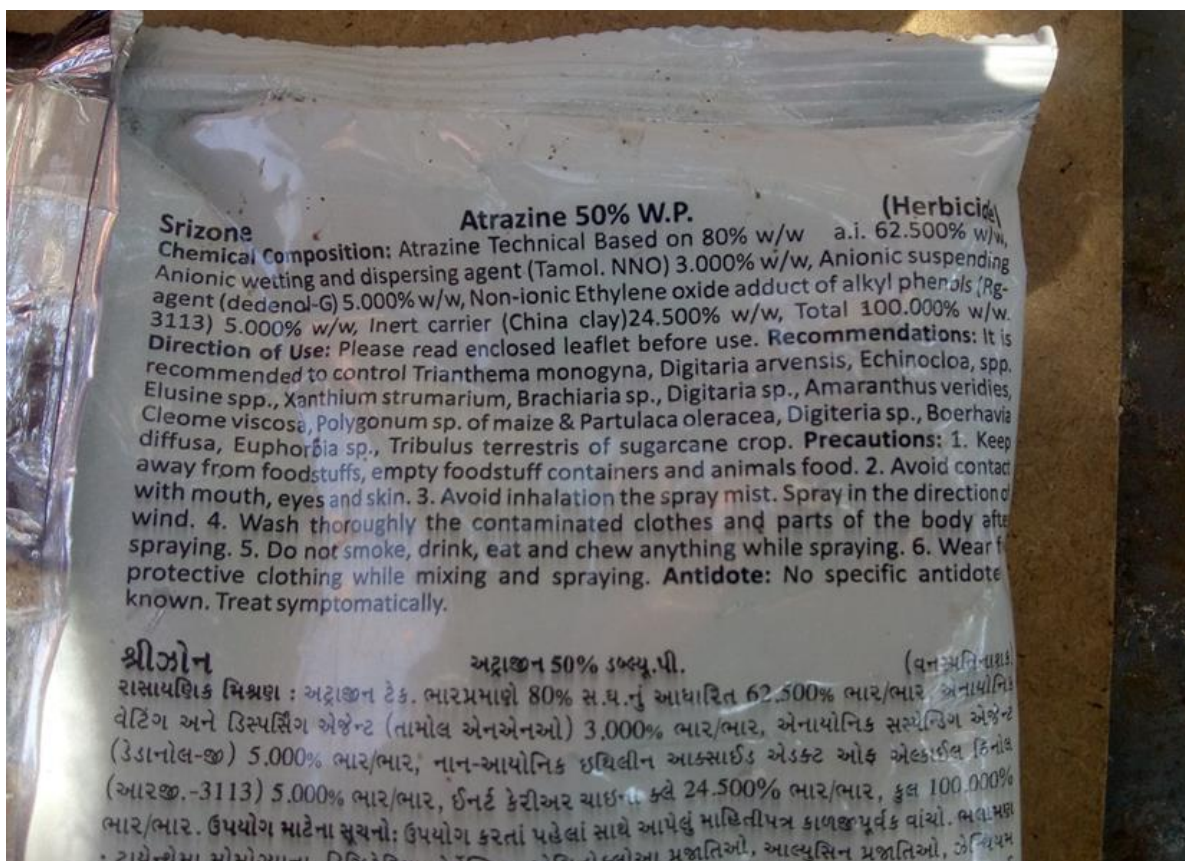


Fig 2: Atrazine powder used

Summary

Successful medical management of Atrazine (Herbicide) poisoning in a heifer cow is placed on record.

Acknowledgement

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