

AMITRAZ POISONING AND ITS MANAGEMENT IN DOGS— A CLINICAL REPORT OF 5 CASES

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A total of 5 clinical cases between 1 and 3 years of age were presented with the complaint of hind quarter weakness/loss of weight bearing, incoordination and drowsiness, besides the history of recent exposure to an amitraz-containing solution. Clinical examination of dogs showed protrusion of tongue, bradycardia (50 to 60 beats/min), hypothermia (99.0 to 99.8 °F), mydriasis, incoordination, dullness, drowsiness (drunken walk) and abdominal distension in almost all cases. Treatment protocol of the poisoned dogs consisted of dexamethasone 0.25 mg/kg bwt i.v., ceftriaxone 20 mg/kg bwt i.v., DNS 15 ml/kg bwt i.v. and nervine tonic (neurokind) 2ml i.m. once daily for 3 days. The soft tissue wounds at the injection site after intra-muscular injection in one case was given daily dressing with diluted povidine-iodine solution (1:1) and neosporin powder. On day 2, assisted walk with mild incoordination was recorded, while complete recovery was observed on day 3 in all the cases. This report puts on records a therapeutic regimen that may be helpful in management of amitraz poisoning in dogs, when the specific antagonists are not available.

Key Words: Amitraz toxicity, bradycardia, dog, hypothermia

Introduction

Amitraz is used as an animal ectoparasiticide on cattle, goats, sheep, pigs and dogs besides its application as pesticide on plants (Corta et al., 1999). It is an effective insecticide used in some brands of dogs tick collar and topical solutions. Amitraz toxicosis can be caused in a number of ways. The most common cause of its poisoning is when a dog chews or ingests its own collar. It may also occur if an inadequately diluted amitraz containing solution is applied topically on the dogs skin or if the dog ingest undiluted solution directly. Amitraz poisoning in dog is generally exhibited by abdominal distension, abnormal forelimb and hind limb reflexes, abnormal papillary reflexes, arrhythmia, bradycardia, coma, decreased respiratory rate, diarrhoea, hypothermia, polyuria and vomiting (Lee, 2013). If a diluted solution is topically applied in a proper way then its toxicity occurs quite rarely. There are only scanty scientific reports demonstrating amitraz poisoning and its management in dogs. Present study details amitraz poisoning owing to application of undiluted amitraz (12.5%) solution on skin lesions (3 cases), licking (1 case) and intramuscular injection (1 case) along with its management.

Materials and Methods

A total of 5 clinical cases between 1 and 3 years of age were presented at the Department of Teaching Veterinary Clinical

Complex, College of Veterinary Sciences and Animal Husbandry, R. K. Nagar, Agartala, with the complaint of hind quarter weakness/loss of weight bearing, incoordination and drowsiness. Detailed history of all the clinical cases revealed recent exposure to an amitraz-containing solution viz., application of undiluted amitraz solution (12.5%) in 3 dogs, licking of diluted solution from the body in 1 dog and intra-muscular injection of 3 ml undiluted amitraz solution in 1 dog. Clinical examination of dogs showed protrusion of tongue, bradycardia (50 to 60 beats/min), hypothermia (99.0 to 99.8 °F), abdominal distension, mydriasis, incoordination (drunken walk), dullness and drowsiness in all cases. In case of dermal exposure, bathing and rinsing of exposed region was done with water. The poisoned dogs were treated with dexamethasone 0.25 mg/kg bwt i.v., ceftriaxone 20 mg/kg bwt i.v., DNS 15 ml/kg bwt i.v. and nervine tonic (Vitamin B1, B6 and B12) @ 2ml i.m. once daily for 3 days. Besides, dog with history of intra-muscular injection was given daily dressing of wound with diluted povidine-iodine day's solution (1:1) and neosporin (neomycin, polymixin B sulphates and bacitracin zinc) powder for 10.

Results and Discussion

All dogs with amitraz toxicosis showed good response to therapy. On day 2, dog began walking with mild incoordination while complete recovery was observed on day 3 in all

the cases. Dog with history of amitraz injection showed damage to the soft tissues at the injection site which healed completely on day 12 of the treatment. Amitraz stimulates α -2 adrenoreceptors resulting in impairment of consciousness, respiratory depression, convulsions, bradycardia, hypotension, hypothermia and hypocalcaemia (Proudfoot, 2003) as seen in present report. Animal studies indicate that the α -2 adrenoreceptor antagonists, yohimbine and atipamezole, can reverse amitraz induced toxicity. All clinical and biological effects observed during the course of amitraz poisoning could be attributed the parent compound itself and are reversed by low doses of atipamezole (Hugnet, 1996). Non availability of specific antidote against amitraz in this region forced the author to adopt the measure to ensure the elimination of toxin through fluid therapy and overcome the clinical signs with corticosteroid and nervine tonic therapy. Clinical reports on the management of

amitraz poisoning in dogs are scanty and this report will be helpful in management of amitraz poisoning in areas where specific antagonists for this toxicosis are not accessible.

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