

Alpha-Cypermethrin Toxicity in a Labrador Dog: A Case Study

J.J. Parmar*, Neha Rao, A.I. Shah and D.M. Patel

Veterinary Clinical Complex

College of Veterinary Science and Animal Husbandry

Anand Agricultural University, Anand-188001

Publication Info

Article history:

Received : 25-05-2018

Accepted : 10-06-2018

Published : 20-07-2018

Key Words:

Alpha-cypermethrin, Toxicity, Labrador dog.

*Corresponding author:

jigneshparmar2000@gmail.com

This work is licensed under the Creative Commons Attribution International License (<http://creativecommons.org/licenses/by/4.0/P>), which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

Copyright ©: 2018 by authors and SVSBT.

Dogs may be exposed to pesticides used in and around the home. Pesticide toxicity is very common in pets when these drugs are used to control insects and ecto-parasites. Herbicides applied to lawns are also found to be toxic for dogs. Alpha-cypermethrin is an active pyrethroid of many insecticides and effectively controls a wide range of pests in agriculture. Pesticides with alpha-cypermethrin available in the market as a concentrate in suspension or mixed with other insecticides (Luty *et al.*, 1998) comprise the alpha C isomers of cypermethrin which are considered to be two- to three-fold more toxic than cypermethrin and are one of the most effective pyrethroids (Hartnik *et al.*, 2008). This communication reports a case of α -cypermethrin toxicity and its clinical management in a Labrador.

Case History and Clinical Observations

A four year old Labrador male dog weighing 26 kg was presented under emergency at Veterinary Clinical Complex of the College in Anand with history of ingestion of insecticide containing alpha-cypermethrin. The dog was showing signs of tremor and salivation. The dog was active with mild incoordination of limbs and all the physiological parameters were within normal range.

Treatment and Discussion

The dog was treated with intravenous

injections of Normal saline 500 ml, Atropine sulphate @ 0.04 mg/kg, Dexamethasone @ 2 mg/kg, Frusemide @ 2 mg/kg and Ranitidine @ 0.5 mg/kg. There was improvement in clinical signs and nothing abnormal was detected. The dog was treated with Inj. RL 500 ml intravenously and same treatment was repeated the next day. Recovery on the subsequent days was uneventful. No specific antidote against α -cypermethrin is available, so symptomatic treatment was given to the dog. Parmar *et al.* (2015) reported acute toxicity of cypermethrin in a Spitz dog, which treated with anticonvulsant drug with almost very similar treatment regime. In this case the dog

was active with mild incoordination and tremors, hence anticonvulsant was not given. Synthetic pyrethroids occupy an important position among commonly applied pesticides on dog skin and their neurotoxicity has been reported. In mammals and insects cypermethrin affects axons of the neurons in the peripheral and central nervous system and interacts with the sodium ions transportation system through the cellular membrane (Tao *et al.*, 2008). Looking to the sporadic incidences of such pesticide toxicity in pets, the owner of pets must read and follow the instructions for application of pesticides and it is advisable to store pesticides out of reach of pets and children.

Acknowledgements

We are thankful to Dr. A.M. Thaker, Dean and Principal, Veterinary College, Anand for providing necessary facilities.

References:

- Hartnik, T., Sverdrup, L.E. and Jensen, J. (2008). Toxicity of the pesticide alpha-cypermethrin to four soil non-target invertebrates and implications for risk assessment. *Environ Toxi. Chem.*, **27**(6): 1408-1415.
- Luty, S., Latuszynska, J., Halliop, J., Tochman, A., Obuchowska, D., Przylepa, E. and Korczak, E. (1998). Toxicity of dermally applied alpha-cypermethrin in rats. *Ann. Agric. Environ. Med.*, **5**: 109-116.
- Parmar, J.J., Parikh, P.V., Kelawala, D.N. and Nauriyal, D.S. (2015). Cypermethrin toxicity in a Spitz dog. *Indian J. Vet. Med.*, **35**(2): 154.
- Tao, T.Y., Wei, L.Z., Yang, Y., Tao, Z. and Zhwo, Y. (2008). Effects of alpha and theta cypermethrin insecticide on transient outward potassium current in rat hippocampal CA3 neurons. *Pesticide Biochem. Physiol.*, **90**: 1-7.

□