

CASE REPORT

Amitraz Poisoning: A Case Report

Choor CK¹, Santha KN²

¹Department of Medicine, Faculty of Medicine, Universiti Kebangsaan Malaysia, 56000 Kuala Lumpur

²Department of Medicine, Hospital Tengku Ampuan Rahimah, 41200 Klang, Selangor

ABSTRAK

Keracunan Amitraz jarang berlaku dan kes ini tidak pernah dilaporkan dalam kajian di Malaysia. Pengambilan bahan ini membawa kepada kesan sampingan yang membahayakan nyawa. Kami melaporkan satu kes keracunan Amitraz yang berlaku pada seorang dewasa berumur 18 tahun. Beliau mengalami hipotensi dan memerlukan sokongan pernafasan serta jagaan seharian dalam unit intensif. Beliau telah diberi rawatan berlandaskan simptom di bawah pengawasan rapat dan telah sembuh dengan cepat dan dibenarkan balik selepas 3 hari.

Kata kunci: amitraz, keracunan, dewasa

ABSTRACT

Amitraz poisoning is rare and there has been no reported cases in the Malaysian literature. Ingestion of this compound carries many life threatening side effects. We describe a case of Amitraz poisoning in an 18 years old young adult. He developed hypotension, required ventilatory support and a day of intensive care unit stay. He had a quick recovery after he was treated symptomatically and was discharged well after 3 days.

Key words: amitraz, poisoning, adult

INTRODUCTION

Amitraz is a synthetic compound, widely used in veterinary medicine as an insecticide and acaricide. The IUPAC name is 1,5 di-(2, 4-dimethylphenyl)-3-methyl-1,3, 5-triaza-penta-1, 4-diene, a member of the formamidine pesticide group. It is generally used as a treatment for control of ticks and mites in dogs (Shitole et al. 2010). Only a handful of

Amitraz poisoning cases are reported in the literature and to date, no such cases are described in the Malaysian literature. We report a case of amitraz poisoning and review the clinical features and management of his condition.

CASE REPORT

A healthy 18 year-old man had ingested an approximately 100ml of undiluted anti

Address for correspondence and reprint requests: Choor Chee Ken, Department of Medicine, Pusat Perubatan Universiti Kebangsaan Malaysia, 56000 Kuala Lumpur. Tel: 03-91455555 ext 6089 Fax: 03-91456679 Email: choor123@gmail.com

flea shampoo for dogs in a suicidal attempt. He was brought into the Emergency Department an hour after ingestion with an initial blood pressure of 115/60 mmHg and a pulse rate of 110 beats per minute. He was alert with a Glasgow Coma Scale (GCS) score of 15/15 and a blood capillary glucose of 5.4 mmol/L. However, he was noted to be drowsy an hour after admission with a reduced GCS score of 8/15. His blood pressure also plummeted to 75/40 mmHg with a pulse rate of 60 beats per minute. Accordingly, he was intubated for airway protection and started on inotropic support (noradrenaline). Blood tests revealed normal renal and liver function. He was normoglycemic throughout. Toxicology screen for other poisons were negative.

After inotropic support was tapered off within 8 hours, his condition improved over the next three days and was subsequently discharged well.

DISCUSSION

Amitraz is a potent α_2 -adrenergic agonist. Stimulation of central α_2 -adrenergic receptors results in hypotension and bradycardia (Jones 1990). Common clinical presentations include central nervous depression ranging from drowsiness to coma (Bonsall et al. 1983). Other reported effects of Amitraz poisoning are hyperglycemia, hypothermia and convulsions (Leung et al. 1999). Organophosphates, opioids and drugs that act at α_2 -adrenergic receptors such as clonidine can also present similarly and might lead to diagnostic confusion. The reported time from ingestion to the onset of signs and symptoms is about 30 to 90 minutes. The duration of recovery varied from 2 to 48 hours after presentation (Avşaroğullari et al. 2006). Our patient had central nervous depression with hypotension and bradycardia two hours after ingestion

which was consistent with Amitraz's effects. He had a relatively quick recovery and his condition improved a day after ingestion. However, there was neither hyperglycemia nor hypothermia in him. Clinical features such as unconsciousness, hypotension and bradycardia requiring mechanical ventilation were described in similar cases (Shitole et al. 2010). Yilmaz et al. has also described severe respiratory depression requiring mechanical ventilation for less than 24 hours.

Treatment of Amitraz poisoning is mainly supportive and symptomatic. There is no specific antidote for this poisoning (Yilmaz et al. 2003). In some animal studies, α_2 -adrenergic antagonists such as yohimbine and atimepazole reversed most of the signs in Amitraz poisoning. However, these antagonists have never been used in humans and should only be considered in severe cases (Avşaroğullari et al. 2006). The main goal of management in Amitraz poisoning is airway clearance with adequate ventilation in cases of impaired consciousness. Inotropic agents (dopamine and noradrenaline) may be required in hypotensive patients who are not responsive to fluid challenges (Avşaroğullari et al. 2006). Atropine may be useful for treating hemodynamically unstable bradycardia (Jones 1990). Despite a life threatening clinical picture, Amitraz poisoning in humans carries a low mortality when appropriate supportive therapy is given (Shitole 2010).

REFERENCES

- Avşaroğullari, L., İkizceli, I., Sungur, M., Sözüer, E., Akdur, O. & Yücei, M. 2006. Acute amitraz poisoning in adults: Clinical features, laboratory findings, and management. *Clin Toxicol* **44**(1): 19-23.
- Bonsall, J.L. & Turnbull, G.J. 1983. Extrapolation from safety data to management of poisoning with reference to amitraz (a formamidine

- pesticide) and xylene. *Hum Toxicol* **2**(4): 587-592
- Jones, R.D. 1990. Xylene/amitraz: A pharmacologic review and profile. *Vet Hum Toxicol* **32**(5): 446-448.
- Leung, V.K., Chan, T.Y. & Yeung, V.T. 1999. Amitraz poisoning in humans. *J Toxicol Clin Toxicol* **37**(4): 513-514.
- Shitole, D.G., Kulkarni, R.S., Sathe, S.S. & Rahate, P.R. 2010. Amitraz poisoning – an unusual pesticide poisoning. *J Assoc Physicians India* **58**: 317-319
- Yilmaz, V.K., Chan, Yilmaz, H.L & Yildizdas, D.R. 2003. Amitraz poisoning, an emerging problem: epidemiology, clinical features, management, and preventive strategies. *Arch Dis Child* **88**(2): 130-134