

Case Report

Self injection of Dichlorvos, an Organophosphorus Compound

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Abstract:

We report two patients who injected themselves a strong organophosphate compound, dichlorvos, and showed the typical clinical picture of organophosphate intoxication. There are very few case reports of parenteral organophosphorus poisoning. With the appropriate therapy, their symptoms disappeared in a few days. The cases are reported because of unusual and interesting way of intoxication.

Key Words: Dichlorvos, Organophosphorus poisoning, Self injection

Introduction:

Organophosphorus compounds are routinely used as pesticide in agriculture sector, vector control and domestic purpose. These compounds are an easy access source for suicidal purpose in India, a predominantly agrarian country. Intoxication occurs following the absorption through gastrointestinal tract, skin, respiratory tract and rarely by intramuscular or intravenous route. We are reporting two cases of organophosphorus poisoning, in an unusual way of self injection, which is very rare and uncommon, managed in our hospital. Both patients injected a strong dimethyl organophosphate compound dichlorvos.

Case Report:

Case No: 1

A twenty four year old female health care worker was admitted with alleged history of self injection of Nuvan (dichlorvos-76% EC), unknown amount into a left forearm vein (Fig-1) and started having typical signs and symptoms of organophosphate intoxication within thirty minutes of injection. She received a loading dose of atropine followed by continuous infusion along with pralidoxime. Muscarinic and nicotinic symptoms persisted for two days. Patient recovered fully without any feature of intermediate syndrome or delayed polyneuropathy on follow up. Psychiatric evaluation was done and patient was counseled and discharged on antidepressants.



Figure-1 Picture showing hyperemia at the site of injection in left forearm and elbow

Case No: 2

A twenty six year male, horticulturist was admitted with alleged history of self injection of Divax (dichlorvos-76% EC), into the left deltoid (Fig-2) three hours back. The patient had filled a disposable syringe with 5ml of the compound and injected approximately 3ml of the pesticide (Fig-3). At admission patient showed muscarinic and nicotinic symptoms like excessive salivation, lacrimation, miosis and bradycardia. Patient was started on atropine drip and pralidoxime. The symptoms reversed in two days and patient recovered fully without any feature of intermediate syndrome or delayed polyneuropathy on follow up. On psychi-

atric evaluation it was found to be an impulsive act and counseling was done.



Figure-2 Picture showing site of injection in left deltoid



Figure-3 Picture showing pesticide vial and the disposable syringe used for self injection

Discussion:

Organophosphorus (OP) pesticide poisoning is a worldwide problem with deliberate self harm by poisoning reaching an epidemic proportion with an estimated three million poisonings every year.(1) Fatality rates of 20% are common with an estimate of 200,000 deaths worldwide each year from pesticide poisoning.(2) India is a predominantly agrarian country with about 60-80% rural population.(3) Primary prevention of poisoning is difficult in India because of the widespread use of OP pesticides by agricultural communities. While ingestion with suicidal intent is a common mode for OP poisoning worldwide, occupational exposure in agricultural worker engaged in spraying operations in fields is

an important modality of poisoning in India. There are very few case reports of organophosphorus poisoning by intravenous or intramuscular route. In one report, a patient who injected himself a strong organophosphate compound, methamidophos, had shown the features of acute cholinergic crisis within 30 min and had satisfactory recovery with intermittent boluses of pralidoxime.(4) Another case of attempted suicide in an 80 year old man by intramuscular injection in the thigh of an organophosphate, isofenphos is also reported. He developed cholinergic crisis five hours after injection and the signs and symptoms lasted for 15 days probably due to slow release of OP agent into the circulation and he required prolonged hospitalization and was given mechanical ventilation and pralidoxime therapy.(5) In another case cholinergic crisis was reported within 30 min of accidental intravenous monochrotophos poisoning in a 32 year male. The patient developed intermediate syndrome and was managed by atropine, pralidoxime and ventilatory support with full recovery.(6)

Himachal Pradesh a north Indian state has a huge apple producing horticultural belt and organophosphorus based pesticide formulations are mainly used to contain pest attack on the apple fruit. Thus organophosphorus compounds are readily available in the households of orchardists and can also be easily accessed over the counter in the country side. Dichlorvos is a dimethyl organophosphorus pesticide compound. The solution used for spraying on apple trees is prepared by diluting 0.5 ml of dichlorvos in one litre of water. Deliberate self poisoning by pesticides as well as accidental exposure is very common in this part of the country. There is a need to educate people regarding careful use of pesticides and develop an integrated pesticide management system.

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