

Organophosphorous poisoning complicated with intermediate syndrome- A case report

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Keyword: Organophosphorus poisoning, intermediate syndrome



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Abstract

Organophosphorous poisoning is a very common poisoning. Intermediate syndrome with respiratory failure is a highly fatal complication. We report a case of 20 year old male who developed intermediate syndrome despite adequate atropinisation. Early clinical recognition of the syndrome and institution of mechanical ventilation along with ongoing atropine therapy was instrumental in saving the patient's life. Patient was discharged on day 10 after successful treatment.

Introduction

According to a WHO stat approximately three million pesticide poisoning occurs worldwide and cause more than 40000 deaths per year.(1) Newer review articles report that number of deaths and casualties attributed to organophosphate pesticide worldwide is about 300000.(2) Developing countries report alarming rates of toxicity and death. This is probably because of easy availability of highly toxic pesticides at the moment of stress.(3,4) Poisoning is a very common cause of medical admissions and deaths in Nepalese hospitals.(5-12) Organophosphorus compounds are most common form of poisoning in Nepal.(13-14)

Case report

A male nursing student of 20 years was admitted to ICU through

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casualty department with alleged history of consumption of chlorpyrifos 50%. He consumed the compound with suicidal purpose following quarrel with his girlfriend. At the time of arrival about four hours after consumption of compound patient was semiconscious with GCS of 12. His pulse was 64/min regular, BP was 100/60mmHg, RR was 22/min. Pupils were three mm and reactive to light. Chest auscultation revealed crepitations all over lung field. He was treated as per standard protocols. After atropinisation patient improved with GCS of 15, vitals within normal limits, chest clear. Patient was shifted to ICU with maintenance dose of atropine and PAM. On third day morning patient deteriorated despite of adequate atropinisation. Patient developed weakness of limbs, was unable to hold his head, saturation dropped to 82% even with supplemental oxygen, RR dropped to 12/min. ABG reports showed CO₂ retention with decreased level of oxygen. Clinical diagnosis of intermediate syndrome was made. Patient was intubated and put on mechanical ventilation. Atropinisation was continued. PAM was discontinued on day four. On day five patient showed signs of improvement. He was gradually weaned off from ventilator and was extubated on day seven. Atropine was gradually tapered and stopped on day nine. Patient was discharged on day 10 after psychiatry consultation.

Discussion

OP poison induced Intermediate syndrome (IMS) was first described by Wadia et al as type II paralysis.⁽¹⁵⁾ Term IMS was coined by Senanayake and Karalliedde.⁽¹⁶⁾ IMS was initially described as syndrome of muscular paralysis occurring in conscious patients 24-96h after ingestion. Muscle weakness predominantly affects proximal limb muscles and those supplied by the cranial nerves. It is often associated with respiratory failure. Few recent works suggest that IMS could occur before 24 h and also after 96 h.⁽¹⁶⁻¹⁸⁾ The incidence of IMS has been reported to be between 20-68%.⁽¹⁹⁾ such delayed manifestations are reported to occur due to acetylcholinesterase aging, defective rephosphorylation and decreased synthesis of new enzymes. IMS carries high mortality if presents with respiratory failure. Treatment of IMS is mainly supportive, early aggressive gastrointestinal decontamination, followed by appropriate therapy of atropine and oximes, and prompt institution of ventilatory support, should be helpful in ameliorating the magnitude and/or the incidence of IMS. Fresh frozen plasma, obidoxime^(20,21), whole blood transfusion are proposed therapy with better survival in various studies.

Conclusion

IMS is a fairly common complication of OP poisoning. It carries high mortality if respiratory failure occurs in the patient. Early clinical diagnosis of the syndrome is very crucial. Supportive therapy remains cornerstone in management of IMS. Prompt instillation of Mechanical ventilation along with adequate atropine therapy is life saving.

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