

Death Due to Organophosphate Poisoning

Organofosfat Zehirlenmesi Nedeniyle Ölüm
Acil Tıp

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Özet

Organik fosfat zehirlenmeleri hayatı tehdit eden zehirlenme grubudur. Semptomlar (SLUDGE: Salivasyon, lakrimasyon, ürinyasyon, defekasyon, gastrointestinal bulgular, bulantı, kusma, terleme, bronşial sekresyon artışı), muskarinik, nikotinik ve santral etki sonucu bradikardi, solunum sıkıntısı, fasikülasyon, bilinç bozukluğu gibi semptomlar gelişen hayatı tehdit eden zehirlenme grubudur. Tanıda, klinik durum ve kolinesteraz düzeyleri kullanılmaktadır. Tedavide atropin ve pralidoksim (PAM) temel ilaçlar olup hastanın kliniğine göre diğer destekleyici tedavilerin acilen başlanması gerekmektedir. Bu yazıda zehirlenme sonucu solunumsal ve kardiyak arrest gelişen hasta sunularak erken müdahalenin önemi vurgulanmak istendi.

Anahtar kelimeler: Çocuk olgu, Organofosfat, Ölüm

Abstract

Organophosphate poisoning is a life-threatening group of poisoning. Symptoms (SLUDGE: Salivation, lacrimation, urination, defecation, gastrointestinal bums, nausea, vomiting, sweating, increased bronchial secretion) develop due to cholinergic effect in organophosphate poisoning. Other symptoms develop such as bradycardia, respiratory distress, fasciculation, unconsciousness due to muscarinic, nicotinic and central effect. Clinical status and cholinesterase levels are used in diagnosis. Atropine and pralidoxime (PAM) are the main medication in treatment. Other supportive treatments should be started urgently according to the patient's clinic. In this article, we present a patient who developed respiratory and cardiac arrest after poisoning and early intervention is importance.

Keywords: Child case, Organic phosphate, Death

Introduction

Agricultural medicine are different structure. Organic phosphate derivatives are most commonly used in our region. It is fatal when the diagnosis is late. This article describes the patient who developed multiple organ failure and died.

Case Report

A 14-year-old female patient was brought to the emergency department due to organophosphate poisoning. She had nausea, vomiting, weakness, impaired consciousness, and her heart rate dropped. The patient was brought to the emergency department within 2 hours. Cardiopulmonary arrest developed in the patient. Advanced life support was given with mechanical ventilation. Atropine and other supportive treatments were started. Her general condition deteriorated. She was unconscious and her Glasgow Coma Scale was 7 and endotracheal intubation was performed. The patient was monitored with mechanical ventilation in intensive care. No abnormality was detected in the first routine blood tests. Her laboratory results were: Hyponatremia (sodium 120 mmol / L (134 - 145), metabolic acidosis in five day. Cholinesterase levels was measured as 1200 (5000-10000). Hypoxic ischemic encephalopathy was detected in the brain tomography of the patient. The patient received supportive care and hemodialysis. She developed cardiopulmonary arrest on the 11th day of admission.

She did not respond to resuscitation.

Case Discussion

Organophosphate compounds are widely used in the agricultural sector worldwide. The most commonly used species are diazinon, malathion, chlorpirofos¹. These agents, widely used in our country, causing poisoning in one million accidents worldwide every year. Two million suicide intoxications are seen. As a result, 100 thousand people lose their lives². The amount of drug and the patient administration are important in patients³. Our patient had taken malathion group medication for suicide. How much medicine is not known. His general condition was bad.

Organophosphates inhibit the enzyme acetylcholinesterase and cause the accumulation of acetylcholine at the nevre-muscle junction. Thus, muscarinic, nicotinic and central nervous system findings are formed^{1,3}. Pulmonary edema, adult respiratory distress syndrome, pulmonary infections and acute pancreatitis are other complications^{4,6}. After the nicotinic effect, the upper respiratory tract obstruction and paralysis can occur in the diaphragm muscles. Acute respiratory failure is the primary cause of death in most cases. Cholinesterase levels are also low in our patients. Heart failure and multiple organ failure were present.

Conclusion

Respiratory failure may be occur in organophosphate poisoning at 72 hours. Patients with respiratory distress require early intubation and respiratory support.

References

1. Robey CW, Meggs WJ. Insecticides, herbicides, rodenticides. In: Tintinalli JE, Kelen GD, Stapczynski JS, editors. Emergency medicine, 6th edn. New York: McGraw-Hill; 2004. p. 1134-43.
2. Al B, et al. Demographic features of patients faced emergency department service with organophosphate poisoning. J Med Res. 2006; 4: 5-13.
3. Joshi S, Biswas B, Malla G. Management of organophosphorus poisoning. Update in Anaesthesia. 2005; 19: 1-2.
4. Choi P TL, Quinnone LG, Cook DJ. Acute organophosphate insecticide poisoning. Clin Inten Care. 1995; 6: 5.
5. Sahin D, et al. The prevelance of pancreatitis in organophosphate poisonings. Human & Amp; Experiment Toxicol. 2002; 21: 175-77.
6. Karakuş A, et al. Cases of organophosphate poisoning treated with high-dose of atropine in the intensive care unit and the novel treatment approaches. Toxicol Ind Health. 2014; 30 (5): 421-5.

Information Presantation

48. Türk Pediatri Kongresi Side- Antalya 15-19 Mayıs 2012.