



ACUTE PANCREATITIS: UNCOMMON COMPLICATION OF ORGANOPHOSPHOROUS INHALATIONAL POISONING

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ABSTRACT Organophosphorous (OP) Compounds are commonly used in agriculture as pesticides. Hence, easily available for suicide purposes. However, occupational exposure leading to inhalational poisoning, is also one of the commonest reason for hospital admission. Patients may have acute pancreatitis as an uncommon complication which is easily missed. Clinical, biochemical and radiological investigations may help in diagnosis leading to prompt management.

KEYWORDS : Organophosphorous Poisoning, Monocrotophos, Pancreatitis, Lipase

INTRODUCTION:

Organophosphorus (OP) compounds are commonly used in agriculture as pesticides. Toxicity of organophosphorous compounds can be due to ingestion or inhalational during occupational exposure. Major effect is irreversible inhibition of acetyl cholinesterase (AChE) leading to muscarinic and nicotinic receptor activation due to increased acetyl choline levels. Typical muscarinic symptoms of presentation are salivation, lacrimation, urination, diarrhea, gastric cramps, emesis (SLUDGE) symptoms and nicotinic symptoms are weakness, fasciculations etc. Common complications in clinical practice are intermediate syndrome, respiratory failure, shock, delayed polyneuropathy etc. are mentioned in medical books. However, acute pancreatitis, a common complication which is frequently seen but ignored in clinical practice. Pancreatitis due to OP is caused by increased pressure within the pancreatic duct as a result of increased exocrine secretion of pancreatic fluid^{1,4}. We present a case report of acute pancreatitis, a rare complication of organophosphorous poisoning, whose identification early, reduced complications and duration of hospital stay with better clinical outcome.

CASE REPORT:

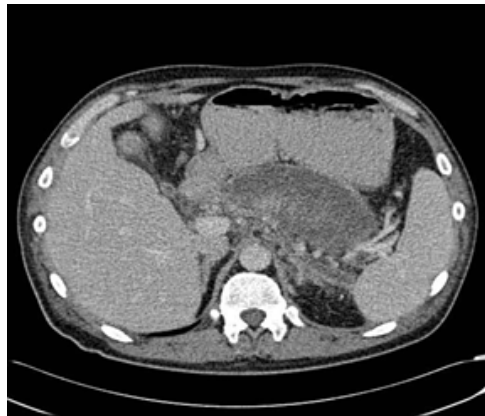
A 22 year old male patient presented to casualty with complaints of salivation, sweating, loose stools, weakness of both lower limbs and history of spraying of monocrotophos in the fields for 3 days without proper protective gear. Patient was non alcoholic, non smoker, non diabetic, non hypertensive. On examination, pt is diaphoretic, small size pupils, pulse rate -68/min, heart sounds are normal and lungs clear. Treatment started with oxygen inhalation, Inj. Atropine in incremental doses till signs of atropinization achieved, followed by infusion and Inj. PAM I gm IV thrice daily for 2 days. On day 3. Patient complained of severe pain abdomen in the epigastric region, dull aching type, radiating to back. Patient initially treated with iv antacids, with no improvement. Routine investigations are sent. Serum amylase, serum lipase, serum lipid profile, total ionic calcium are also sent. Sr Amylase - 620U/L, Sr Lipase - 980U/L are elevated. Rest of the investigations are in normal limits (Table: 1). Ultrasound abdomen showed diffuse enlargement of pancreas with normal pancreatic duct and no gall stones. Contrast enhanced CT abdomen showed bulky pancreas without gall stones with few non-enhancing areas in body of pancreas (Figure: 1).

Patient treated with IV fluids, Tramadol IV infusion, symptoms reduced in 3 days and patient is discharged by 7th day with diagnosis of OP inhalational poisoning with complication of acute pancreatitis. Follow up after 4 weeks showed no signs of complications of pancreatitis and neurologic sequelae of OP poisoning.

Table 1:

Day of Admission	Day 3 of admission
Hb - 13.2 gm%	Sr. Amylase - 620U/L
WBC - 9000cells/mm ³	Sr. Lipase - 980U/L
Patelet count - 2,50,000cells/mm ³	Sr. Lipid Profile
Sr. Creatinine-0.6 mg/dl	Sr. Cholesterol - 140 mg/dl
Sr. Bilirubin - 0.8 mg/dl	VLDL cholesterol - 25 mg/dl
SGPT - 24U/L	LDL cholesterol -55 mg/dl
SGOT - 22U/L	HDL cholesterol - 60 mg/dl
ALP - 88 IU/L	Triglycerides - 128mg/dl
Sr Cholinesterase - 702U/L	Total ionic calcium - 1.2mmol/l
RBS - 98mg/dl	

Figure : 1



DISCUSSION:

In the literature, several cases of acute pancreatitis in patients with OP compound poisoning has been reported. The possible pathogenetic mechanism suggested for the pancreatic insult is excessive cholinergic stimulation of the pancreas and ductal hypertension. Release of excessive acetylcholine due to the organophosphate occludes the ampulla of Vater and the pancreatic duct functionally and stimulates pancreatic acinar cells, resulting in interstitial pancreatitis. Due to pancreatitis, serum amylase and serum lipase levels are elevated. These reports are usually sent based on clinical suspicion of pancreatitis apart from routine investigations. Hyperamylasemia is documented in OP poisoning because of multiple causes such as pancreatitis, intestinal ischemia, hypersalivation etc⁶. Hence serum lipase levels, ultrasound abdomen and CECT abdomen are important for diagnosis of acute pancreatitis.

Generally, acute pancreatitis due to OP poisoning is mild. In fact, one previous report showed that the effect of organophosphates on the pancreas disappears in approximately 72 hours,¹ and complicated acute pancreatitis often improves in 3–5 days⁵. Rarely, complications like pseudocyst, necrotizing pancreatitis, duct rupture leading to pancreatic ascites, chronic pancreatitis etc. can occur. Most of the patients can be treated conservatively by giving antibiotics, adequate hydration and shows spontaneous complete resolution without any sequelae.

CONCLUSION:

Acute pancreatitis is an uncommon complication of OP compound poisoning. Because of non specific symptoms frequently missed in clinical practice. Biochemical investigations like serum amylase and serum lipase along with ultrasound and CECT abdomen can help in making diagnosis and prompt treatment to avoid complications.

REFERENCES:

1. Dressel TD, Goodale RL, Jr, Arneson MA, Borner JW. Pancreatitis as a complication of anticholinesterase insecticide intoxication. *Ann Surg.* 1979;189(2):199–204. doi: 10.1097/0000658-197902000-00011.
2. Dagli AJ, Shaikh WA. Pancreatic involvement in malathion–anticholinesterase insecticide intoxication. A study of 75 cases. *Br J Clin Pract.* 1983;37(7–8):270–2.
3. Weizman Z, Sofer S. Acute pancreatitis in children with anticholinesterase insecticide intoxication. *Pediatrics.* 1992;90(2 Pt 1):204–6.
4. Sahin I, Onbasi K, Sahin H, Karakaya C, Ustun Y, Noyan T. The prevalence of pancreatitis in organophosphate poisonings. *Hum Exp Toxicol.* 2002;21(4):175–7. doi: 10.1191/0960327102ht234cr.
5. Moore PG, James OF. Acute pancreatitis induced by acute organophosphate poisoning. *Postgrad Med J.* 1981;57(672):660–2. doi: 10.1136/pgmj.57.672.660.
6. Lee WC, Yang CC, Deng JF, Wu ML, Ger J, Lin HC, et al. The clinical significance of hyperamylasemia in organophosphate poisoning. *J Toxicol Clin Toxicol.* 1998;36(7):673–81. doi: 10.3109/15563659809162615.