

Case Report**Case Report on Drug Induced Pancreatitis due to Levofloxacin and Methylprednisolone**

Rekhi BK, Associate Professor;* **Rekhi HS**, Assistant Professor;** **Mannem SR**, Resident;** **Mittal SK**, Professor;** **Arora S**, Senior Resident;** **Sathya P**,** **Jindal NK**; Resident;** **Gupta P**. Resident*

* Department of Anesthesia, ** Department of General Surgery
Government Medical College Patiala, Punjab, India

<p>Corresponding Author Dr Srinath Reddy Mannem Resident General Surgery Government Medical College Patiala, India</p> <p>Article History Received Dec 7, 2017 Received in revised form Dec 17, 2017 Accepted on Dec 19, 2017</p>	<p>Abstract Levofloxacin and methylprednisolone appears to be responsible for pancreatitis because of the temporal relationship between the administration of drug, onset and improvement of clinical symptoms when drugs were stopped.</p>
<p>Keywords: Acute pancreatitis, Drug induced pancreatitis. Levofloxacin, Methylprednisolone</p>	<p>© 2018 JCGMCP. All rights reserved</p>

Introduction

Acute pancreatitis is the acute inflammation of the pancreatic gland associated with varying involvement of the surrounding regional tissues or remote organ system. It is characterized by deep seated abdominal pain radiating to back, nausea and elevated pancreatic enzymes.

Acute pancreatitis has been attributed to a wide range of etiological factors. Approximately, 80% of the cases are associated with cholelithiasis or alcohol abuse [1]. Approximately, 1% develop pancreatitis following endoscopic retrograde cholangiopancreatography (ERCP). Several drugs are casually related to pancreatitis particularly corticosteroids, thiazide diuretics, estrogens, azathioprine, and furosemide. Furthermore, in about 10% of cases, no cause can be identified. Pancreatic toxicity of drugs is of relatively recent knowledge through the publication of isolated cases or small series. Up to 2% of cases may be caused by drugs [2].

We report a case of acute pancreatitis in a young female receiving levofloxacin and methylprednisolone.

Case Report

A 26-year-old female was admitted in intensive care unit as a case of pneumonitis. She presented with history of respiratory distress, cough for

seven days and with fever for three days. There is no family history of pancreatic diseases. There is neither any history of alcohol abuse nor drug abuse. On examination, respiratory rate was 30 per min, pulse 128 per min, blood pressure was 118/82 mmHg.

Chest examination showed bilateral diffuse crepts and ronchi with the use of accessory muscles. SpO₂ of 92% with venturi FiO₂ 40%. After routine hematological and radiological investigations, she was diagnosed as pneumonitis and put on Injection ceftriaxone and sulbactam 1.5 g i.v bd, Injection azithromycin 500 mg i.v od, Injection omeprazole i.v od, Nebulization with salbutamol and budesonide

The patient's general condition did not improve and further deteriorated, saturation dropped to SpO₂ of 82% with oxygen and there after patient was shifted to ICU put on volume controlled mechanical ventilation and was put on Injection ceftriaxone and sulbactam 1.5 g i.v bd Injection levofloxacin 500 mg i.v od, Injection solumedrol 50 mg iv od. Injection omeprazole i.v od Nebulization with salbutamol and budesonide.

After two days of treatment, the patient started responding to treatment, was weaned off from ventilator and put on venture mask. On the

third day patient developed acute abdominal pain which is radiating to back and loose stools, for which ultrasonography was done which showed free fluid in the upper peritoneal recess and in between gut loops with left sided pleural effusion. Surgery call was sent and patient was diagnosed as a case of acute pancreatitis clinically, we advised serum amylase and lipase apart from routine investigations. Serum amylase was 346 U/L and serum lipase was 1432 U/L. Patient was advised contrast CT scan of abdomen which showed acute pancreatitis with modified CTSI of 6/10. Total leucocyte count raised from 11,600/mm³ to 20,400/mm³ on same day, the next day it increased to 52,000/mm³ and then to 70,300/mm³. The initial antibiotics were stopped and patient was put on injection meropenem 1 g i.v tds, injection metronidazole 100 ml iv tds After three days patient responded well, serum amylase and lipase levels came back to normal range with normal ultrasonographic findings. Patient was later discharged and advised for follow-up.

Discussion

Drug induced pancreatitis is relatively a less known concept in acute pancreatitis, as it is a relatively rare occurrence considering the small number of patients who develop pancreatitis compared to the large number of patients who receive potentially toxic drugs. Its incidence varies among different studies between 0.1% and 5.3% of all acute pancreatitis cases [3]. The clinical presentation and mechanisms of injury to the pancreas are not well understood and are controversial. The diagnosis of drug induced pancreatitis remains possible or probable in many patients. The resolution of pancreatitis after discontinuation of drug, could improve the diagnosis of drug induced pancreatitis. However, it is difficult to establish the direct correlation between resolution of symptoms and drug withdrawal sometimes.

Pancreatic toxicity of drugs is of relatively recent knowledge through the publication of isolated cases. According to pancreateox file prepared by the Paris Regional Centre - Saint-Antoine, the number of offending drugs reached 261, representing potentially 1–2% of acute pancreatitis [4]. More than 500 different drugs are listed in the World Health Organization (WHO)

database suspected to cause acute pancreatitis as a side effect. Many of them are widely used to treat highly prevalent diseases [5].

Levofloxacin belongs to the new fluoroquinolones group. The most commonly reported adverse reactions are minor digestive disorders and elevated liver transaminases [6].

Mennecier et al. [7] suggest a possible pancreatic toxicity of levofloxacin used alone or with steroids and therefore, encourages us to recommend pancreatic biological tests before the onset of abdominal pain during treatment with levofloxacin. They also stated that there is temporal relationship between the drug intake and development of acute pancreatitis as well as resolution of acute pancreatitis upon discontinuation of drugs in a short interval.

In our case, the time criteria are based on the evolving profile of acute pancreatitis according to the administration and medication discontinuation.

Re-administration of drug has not been made. The temporal relationship between drug intake and the occurrence of pancreatitis is suggestive because the time between the administration of treatment and the occurrence of acute pancreatitis is short. Upon discontinuation of treatment, resolution of acute pancreatitis is suggestive as the clinical and laboratory abnormalities decreased within hours. The problem here is, what is the offending drug? Several cases of acute pancreatitis have been reported with methylprednisolone is a well-established fact [8]. In acute pancreatitis secondary to taking methylprednisolone, the time frame is 3 days to 22 weeks with a dose-dependent mechanism assumed. The mechanism of corticosteroid-induced pancreatitis is complex and currently unknown [9]. In a case report of Seneviratne et al. [9], the pancreatitis started after eight days of high-dose (250 mg) steroid treatment. In our patient, we started 50 mg dose of methylprednisolone. In our observation, the speed of the onset of acute pancreatitis can argue more in favor of an immunological mechanism. This suggests that the already incriminated levofloxacin in elevated pancreatic enzymes can cause acute pancreatitis. However, further observations are needed to confirm this hypothesis.

Conclusion

In this case, levofloxacin and methylprednisolone appears to be responsible for pancreatitis because of temporal relationship between the administration of drug, onset of symptoms and improvement of clinical symptoms when drugs were stopped.

Conflict of Interest None

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