Sandhya Lekshmi.S et al /J. Pharm. Sci. & Res. Vol. 9(7), 2017, 1079-1080

ISSN:0975-1459
Journal of Pharmaceutical Sciences and Research
www.jpsr.pharmainfo.in

A Case Report on Ganciclovir Induced Pancreatitis

Sandhya Lekshmi.S[1], Malavika.S[1], Neeraj Sidharthan[2], Girish Kamath[2], Meenu Vijayan[1]

[1]Amrita School of Pharmacy, Amrita Viswavidyapeetham University, AIMS Health Science Campus, Kochi, India
[2]Department of Medical Oncology and Hematology, AIMS Health Science Campus, Kochi, India.

Abstract

Ganciclovir is an antiviral medication used to treat cytomegalovirus (CMV) infection. The chance of getting pancreatitis with ganciclovir is <1%. Upto 2% of acute pancreatitis may be caused by drugs. In view of CMV virenia he was started on Gancyclovir twice a day initially then counts was found to reduced. Hence the dose reduced to once daily dosing till CMV become negative. But he presented with severe abdominal pain. Emergency USG abdomen showed hepatomegaly with moderate infiltration of liver. His serum amylase and lipase levels were high, indicative of acute pancreatitis. So he was treated conservatively with supportive medications. Patient recovered with conservative measures and was then asymptomatic, tolerating oral feeds well, there were no significant abdominal pain. CT did not show any features of chronic pancreatitis. No further significant pain indicative of pancreatitis. To assess the probability an event which was caused by the therapeutic modality or ingested drug, the Naranjo Scale has been used. It was found that the severity of the ganciclovir induced pancreatitis is a probable ADR. Supportive care and withdrawal of the offending agent and are the management options for drug-induced acute pancreatitis.

Keywords: Adverse drug reaction(ADR), Cytomegalovirus, Ganciclovir, Naranjo Scale, Pancreatitis.

INTRODUCTION

Ganciclovir is an antiviral medication used to treat cytomegalovirus (CMV) infection. The chance of getting pancreatitis with ganciclovir is <1%. Intense pancreatitis is the inflammation of the pancreas with inclusion of other territorial tissues or remote organ systems.[1] It's described by nausea, stomach agony, and increased pancreatic catalysts (serum lipase or potentially amylase) more than three times the upper limit of normal.[2] The reason behind causation of acute pancreatitis is medicines (upto 2%).[3] Hyper-CVAD chemotherapy comprises of two mixes of medications (courses An and B) given in a rotating style. "Hyper" alludes to the hyperfractionated way of the chemotherapy, which is given frequently at smaller doses, to minimize adverse reactions. "CVAD" is the acronym of the medications that are used. A: cyclophosphamide, vincristine, doxorubicin (also known by its trade name, Adriamycin), and dexamethasone. Course B comprises of methotrexate and cytarabine. One of the tools that we are using in an attempt to gain knowledge from the case report is the Naranjo Scale.

CASE REPORT

A 36 year old gentleman, was diagnosed with B cell Acute lymphoblastic leukemia (B- ALL) who was earlier treated with United Kingdom Acute Lymphoblastic Leukaemia (UK ALL) Protocol. After Induction phase 1 chemotherapy, Minimal Residual disease (MRD) was 5 %, hence he was stratified into higher risk. After completion of Phase 2 Induction chemotherapy MRD was still high. Hence the patient was started on Hyper CVAD chemotherapy protocol. He completed 4th ARM A & B and 2nd month of maintenance. He had fever. Serum amylase and lipase levels were sent, which were found to be high. From the routine lab investigations, Peripheral smear done showed Pancytopenia. Platelet count:1 Lakh/cu mm, Singly scattered, Occasional giant platelets. N:61%, L:26%, M:7%, E:5%, B:1%. For further evalauation, during previous admission, in view of persistent fever spikes, Quantitative Cytomegalovirus Polymerase chain reaction (CMV PCR) was done which showed 25,075 copies/cmm. In view of CMV virenia he was started on Gancyclovir. Patient completed 14 days of twice a day Ganciclovir. And his CMV copies have reduced to 1899copies/microlit. He was better, fever subsided, counts improved and was hence discharged and was advised to continue inj. Gancyclovir 400mg once daily till CMV become negative. During this admission, he presented with severe abdominal pain. Emergency ultrasonography (USG) abdomen done showed hepatomegaly with moderate infiltration of liver. His serum amylase and lipase levels were high. Quantitative CMV PCR was done which showed <60 copies/cmm.CMV PCR were negative, Gancyclovir was stopped. In view of Acute pancreatitis , Gastro medicine consultation was sought, was treated conservatively with supportive medications. Patient having persistent abdominal pain in spite of analgesics , Gastro Intestinal Surgery consultation was sought , they adviced to continue conservative management. Pain and Palliative consultation was sought for pain management, their advice was followed. Patient recovered with conservative measures and was then asymptomatic, tolerating oral feeds well. Hence was discharged. When the patient came for the review, there were no significant abdominal pain. computed tomography (CT) done last time did not show any features of chronic pancreatitis. No further significant pain indicative of pancreatitis. No active intervention from gastrointestinal (GI) medicine as of now. If he develops recurrent pancreatitis, will need repeat imaging and endoscopic ultrasound (EUS) to rule out chronic pancreatitis.

DISCUSSION

Treatment recommendations for patients who are diagnosed with ALL include induction, consolidation and maintenance therapy along with Central nervous system

(CNS) prophylaxis are the recommented treatment options for the patients who were diagnosed with ALL.[4] Patients who receive induction therapy with combinations of drugs, over a period of 4-6 week includes vincristine, prednisone, cyclophosphamide, doxorubicin, and L-asparaginase. Then patient receive consolidation (intensification) therapy with multiagent drugs additionally, including cytarabine and methotrexate; for the patients in the induction phase, radiation or surgical treatment has no role. 6-mercaptopurine, methotrexate, steroids, and vincristine are used in maintenance therapy; methotrexate is administered throughout the treatment intrathecally. Hypersensitivity (onset after four to eight weeks of use), hypertriglyceridemia (onset after several months of use), accumulation of a toxic metabolite (onset after several months of use) and intrinsic toxicity/overdose (onset may be almost immediate) are the potential mechanisms of drug-induced pancreatitis.[1] As per the UK Working Party on Acute Pancreatitis update criteria, the diagnosis of acute pancreatitis was made.[5] The diagnosis of acute pancreatitis as per UK guidelines [5] includes elevated amylase or lipase level within 2days of abdominal pain. There is no other clinical chareterestics to identify pancreatitis other than caused by drugs. Hence the diagnosis of drug-induced pancreatitis is challenging. It was found that the severity of the Gancyclovir Induced Pancreatitis is a probable ADR with a Naranjo score of 6. [6] With the correct diagnostic parameters and treatment certain conditions can be completely cured.[7]

CONCLUSION

There are very few studies of similar occurance. Pancreatitis is frequently disregarded due to the trouble in involving a medication as its cause. Management of medication-induced acute pancreatitis involves supportive care withdrawal of the culpable drug also up-to-date knowledge of drugs which helps us to know the mechanism through which they may bring about the response. To assess the probability of an event that was brought about by the ingested drug or the treatment, the Naranjo Scale has been used. It was found that the severity of the ganciclovir induced pancreatitis is a probable ADR.

REFERENCES

1. Tenner, S., Steinberg, W.M., Acute Pancreatitis. In: Feldman,M., Friedman,L.S., Brandt,L.J., et al, Eds. *Sleisenger & Fordtran's Gastrointestinal and Liver Disease*. 9th ed. St. Louis, MO:Saunders, 2010.
2. Whitcomb,D.C., Clinical practice. Acute pancreatitis. *N Engl J Med* 2006, 354, 2142-50.
3. Heinrich,S., Schafer,M., Rousson,V., Clavien,P.A., Evidence-based treatment of acute pancreatitis: a Look at established paradigms. *Ann Surg* 2006, 243,154-68.
4. Kantarjian.H., Thomas.D., O'Brien,S., et al. Long-term follow-up results of hyperfractionated cyclophosphamide, vincristine, doxorubicin, and dexamethasone (Hyper-CVAD), a dose-intensive regimen, in adult acute lymphocytic leukemia. *Cancer*. 2004, 101(12), 2788-801.
5. UK Working Party on Acute Pancreatitis. UK guidelines for the management of acute pancreatitis. *Gut* 2005, 54:iii,1-9.
6. Naranjo CA et al. A method for estimating the probability of adverse drug reactions. *Clin. Pharmacol. Ther*. 1981, 30, 239-245.
7. Karakkattu, J., Roshni, P.R., Etiology for liver diseases in pediatric population, *Asian J Pharm Clin Res*, 2017.10, 1, 91-94.