Acute Pancreatitis and Diabetic Ketoacidosis in Non-diabetic Person while on Treatment with Sodium Valproate, Chlorpromazine and Haloperidol

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Abstract

A nondiabetic young male patient in hypomanic phase of bipolar disorder on maintenance treatment with sodium valproate, developed transient episode of acute pancreatitis and diabetic ketoacidosis after addition of chlorpromazine and haloperidol. It subsided completely within six weeks and his blood sugar was normal without any antidiabetic therapy. Simultaneous occurrence of acute pancreatitis and diabetic ketoacidosis is reported as a very rare complication of combination of antipsychotic drugs sodium valproate, chlorpromazine and haloperidol. Blood sugar should be periodically monitored in patients on sodium valproate and antipsychotic medication.

INTRODUCTION

Acute pancreatitis has been reported as an adverse effect of Sodium Valproate.1,2 Diabetic ketoacidosis has not been reported in association with this drug. Chlorpromazine and Haloperidol are known to increase blood sugar levels.3,4 But pancreatitis and diabetic ketoacidosis are very rare adverse effect of these medications. We report a nondiabetic person having bipolar disorder, on treatment with sodium valproate, chlorpromazine and haloperidol developing pancreatitis and diabetic ketoacidosis.

CASE REPORT

Mr. SM, a 31-year-old male, presented in casualty of this hospital with history of acute onset of vomiting, abdominal pain, and heavy breathing. He was suffering from bipolar disorder since 1989 and had three depressive and six manic episodes up till now last being in the year 2000. He was on Sodium valproate 600 mg/day since 1998. He developed euphoric mood, irritability, restlessness and disturbed sleep since November 2002. Hence Chlorpromazine 200 mg/day and haloperidol 10 mg/day were added to the treatment. There was no history of any infection, alcohol ingestion or taking any other medication. There was no history of pancreatitis or biliary disease in past. His one brother had bipolar disorder and mother has type II diabetes.

On examination he had tachypnoea (respiratory rate 4/mt), tachycardia (heart rate 132/mt), dehydration and epigastric tenderness. Investigations showed presence of sugar and ketone bodies in urine, serum amylase was 1578 U/l, random blood sugar was 580 mg/dl, serum cholesterol 360 mg/dl, serum triglycerides 632 mg/dl, HDL 17 mg/dl, LDL 216 mg/dl, and VLDL 126.3 mg/dl. Ultrasonography and CT scan showed bulky and hyperechoic pancreas suggestive of pancreatitis. There was no pancreatic fluid collection or pseudocyst. Other investigations were within normal limits.

Sodium valproate and antipsychotic medications were discontinued. He was treated with Ryle’s tube aspiration, IV fluids, IV insulin, ceftazidine, metronidazol, potassium chloride, and calcium gluconate. His blood sugar and amylase values were normal within one week of treatment. Blood sugar values were normal even after stopping insulin at six weeks. Rechallenge was not offered.

DISCUSSION

Patient had definite evidence of diabetic ketoacidosis. He also had evidence of acute pancreatitis suggested by acute abdominal pain, high amylase levels and bulky and hyperechoic pancreas on ultrasonography.

Non-specific elevations of serum amylase are described with diabetic ketoacidosis but are usually mild and not associated with clinical features of pancreatitis. Nair S et al5 in a study of 100 cases, found evidence of acute pancreatitis in 11% cases of diabetic ketoacidosis.

The patient was on sodium valproate for last 4½ years. Association of pancreatitis with sodium valproate is well established. Forty five cases in 31 published reports have been reported by Chapman SA et al6 in review of literature. Sodium valproate is known to increased blood sugar level though there is no published report of diabetic ketoacidosis.
associated with sodium valproate.

Chlorpromazine as well as haloperidol is known to increase blood sugar. Ketoacidosis associated with chlorpromazine is rare. There is only one report of diabetic ketoacidosis in association with chlorpromazine in Indian literature and none with haloperidol.

Diabetic ketoacidosis has been reported in patients on other atypical antipsychotics like olanzapine, clozapine, risperidone and quetiapine. Also there is a recent report of diabetic ketoacidosis in a patient treated with olanzapine, valproic acid, and venlafaxine. There is significant risk of developing diabetes in patients taking nonconventional antipsychotic medication like olanzapine. There is no significant drug interaction between sodium valproate and other antipsychotic medication.

This patient had family history of diabetes. He was on sodium valproate treatment. Addition of chlorpromazine and haloperidol might have precipitated diabetic ketoacidosis. He also had transient triglyceridemia, which along with sodium valproate might have precipitated acute pancreatitis. Periodical monitoring of blood sugar should be done in patients with high risk of diabetes, on sodium valproate and anti-psychotic medication.

**REFERENCES**


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**Announcement**

**Training in Diabetes Foot Care**

Project supported by the World Diabetes Foundation (WDF)

Project Committee: Sharad Pendsey, India; Karel Bakker, The Netherlands; Ali Foster, UK; Zulfiqarali Gulam-Abbas, Tanzania, Vijay Vishwanathan, India

Excellent Opportunity for practicing doctors, with a special interest in Diabetes!

Project at a glance 100 doctors with their paramedics (one doctor with one paramedical staff), to be trained in practical diabetic foot care management.

1. Basic course: 2 days at four centers in India (Kolkata, New Delhi, Mumbai & Chennai). Each center will have 25 doctors and 25 paramedics. The course is likely to be held between September/October 2004
2. Advanced Course: 2 days (after 1 year) for the same participants is mandatory

Faculty: Experts in the field of Diabetic Foot Care

Selected participants will be provided with excellent educational material along with diagnostic/therapeutic instrument kits.

Travel to nearest venue, lodging and boarding, access to training and resource materials are covered by a grant from WDF.

Certificate of participation on completion of the advanced course.

Preference to young (<40 years), coming from non-metros, private/public/corporate/govt. medical institutions

Selection committee's decision will be binding in all applicants.

The last date of receipt of application is 30th June 2004.

Write for application form to: Dr. Sharad Pendsey, Project Incharge, Diabetes Clinic and Research Center, "Shreeniwas", Opp. Dhantoli Park, Nagpur 440 012 (India)