

## Drug Induced Acute Pancreatitis and Diabetic Ketoacidosis in A Non-Diabetic, Bipolar Patient

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### Abstract

A young non diabetic male patient on treatment with sodium valproate for hypomanic phase of bipolar disorder, developed diabetic ketoacidosis and acute pancreatitis which is transient in nature after starting the patient on haloperidol and chlorpromazine medications. Patient condition improved and resolved completely with his sugar levels coming back to normal in six weeks of time. Acute pancreatitis and diabetic ketoacidosis manifesting combinedly is a very rare occurrence. This condition can be seen in patients who are on antipsychotic medications like sodium valproate, haloperidol and chlorpromazine. Hence it is important to monitor levels of blood glucose in patients who are on antipsychotic medications. This regular monitoring helps in preventing complications related to hyperglycaemia.

### 1. Introduction

Sodium Valproate usage showed Acute pancreatitis as an adverse effect but usage of sodium valproate did not report incidence of diabetic ketoacidosis so far. Increased levels of blood glucose have been reported with haloperidol and chlorpromazine but occurrence of diabetic ketoacidosis and acute pancreatitis is rare (9). Here we present a case of bipolar, non-diabetic patient on sodium valproate (3), haloperidol and chlorpromazine (2) who developed diabetic ketoacidosis followed by transient acute pancreatitis.

### 2. Case Report

A 28 year old male patient who is a known case of bipolar disorder on regular follow up and was on Sodium valproate 600 mg per day and had five

manic and four depressive episodes so far. Patient presented with abdominal pain which is acute in onset, gradually progressive in nature associated with vomiting, nausea and difficulty in breathing. Patient also has generalised tiredness and easy fatigability. He later patient later on developed restlessness, disturbed sleep, irritability and was euphoric. Hence patient was started on haloperidol 10 mg per day and chlorpromazine 200 mg per day. Patient is not a known diabetic or has any other comorbidities. Patient was not having any previous history of pancreatitis or any biliary disease or any infection. There is no history of alcohol consumption or usage of any other medications. Patient has family history of type 2 diabetes mellitus in mother and his brother is a known case of bipolar disorder as well.

On examination patient looks dehydrated and tachypnoeic with respiratory rate of around 38 per min. His Blood pressure was 110/70 mmHg and heart rate of around 142 per minute. On abdominal examination, epigastric tenderness was present and other system examinations were normal. Urinary complete analysis examination showed presence of ketone bodies and sugar. Pancreatic enzymes were elevated with serum amylase showing 1798 U/L and serum lipase 1528 U/L. His fasting blood sugar level was 298 mg/dl and post prandial was 476 mg/dl and HbA1c was 6.2. Lipid profile showed cholesterol levels of 321 mg/dl, triglycerides 621 mg/dl, HDL 16 mg/dl, LDL 242 mg/dl, and VLDL 126 mg/dl. Hyperechoic and bulky pancreas was seen on USG as well as CT abdomen suggesting of pancreatitis. All other investigations showed normal values.

All antipsychotic medications along with sodium valproate were discontinued. Patient was treated with Intravenous fluids, Insulin injection, antibiotics and supplemented with potassium and other supportive medications. After around one week of treatment and care monitoring, patient glucose levels and pancreatic enzymes levels came normal. Insulin injection was stopped once sugar levels got controlled and careful monitoring of patient's sugars were done. His sugar levels remained normal after stopping of insulin.

### 3. Discussion

The patient had definite evidence of diabetic ketoacidosis as well as acute pancreatitis (1) based on clinical features like acute abdominal pain, difficulty in breathing, nausea and vomiting and investigations showing elevated pancreatic enzymes and ultrasonic and CT picture.

Association of pancreatitis with sodium valproate is well established. Hyperglycaemia is usually seen with sodium valproate but evidence of diabetic ketoacidosis is not seen which goes with chlorpromazine as well as haloperidol also.

Patients using medications like Clozapine, Olanzapine, risperidone and quetiapine, valproic acid (5), (7) which come under atypical antipsychotics are prone to cause diabetic ketoacidosis. With olanzapine there is a significant risk of developing diabetes while interaction

between sodium valproate and other antipsychotic medications is not much significant.

### 4. Conclusion:

In our case, there is type 2 diabetic history in patient's family and patient was on treatment with sodium valproate (4). So, adding additional drugs like haloperidol and chlorpromazine to his treatment must have triggered diabetic ketoacidosis. Acute pancreatitis must have been due to transient triglyceridemia along with intake of sodium valproate. This is why there should be periodical monitoring of blood sugar in all patients who are on sodium valproate and other psychiatric medications as well (6).

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