CASE REPORT

Serotonin Syndrome in a Schizophrenia Patient Post-hemi Colectomy

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Abstract

This article describes a case of Serotonin syndrome (SS), which developed in a patient with treatment resistant schizophrenia post-hemi colectomy. Patient was a 38-year-old, male with treatment resistant schizophrenia who developed septic shock secondary to ischemic sigmoid volvulus, complicated with nosocomial pneumonia and surgical site infection post-operation. Antipsychotics (haloperidol and amisulpiride) was reinitiated a week post-operation when his medical condition was stabilized as patient began to show symptoms of psychosis. Haloperidol was later switched to olanzapine as he was still agitated and disturbed. Fluvoxamine 50mg was added as he displayed hair-pulling behavior. Clopixol accuphase and parental sedation with midazolam and phenergen was given as adjunctive management for agitation. Several days after, he became more restless. Central nervous system examination revealed rigidity, tremors, hyperreflexia and clonus. Discontinuation of fluvoxamine and amisulpiride with reduction of olanzapine to 20mg ON resulted in full neurologic recovery within the first 24 hours. It was not well understood how this patient developed serotonin syndrome despite him on low dose of fluvoxamine. Clinicians should be aware of risk of serotonin syndrome when adding serotonergic agents to antipsychotics especially in patients’ post-hemi colectomy.

Keywords: Fluvoxamine, Atypical antipsychotics, Schizophrenia, Serotonin Syndrome, Post-hemi Colectomy

Introduction

Serotonin syndrome is a drug induced syndrome where there is an increased in the serotonin concentrations in the central nervous system. It is often described as a clinical triad of mental status changes (such as confusion, agitation), autonomic hyperactivity (such as hyperthermia, tachycardia) and neuromuscular abnormalities (such as rigidity, hyperreflexia, clonus, myoclonus). Moderate serotonin toxicity is reported in 15% of overdose with selective serotonin reuptake inhibitors (SSRIs)¹. Severe of life-threatening conditions mainly results from stimulation of 5-HT2 receptors, and it usually occurs only with combination of two
or more serotonergic drugs\(^2\). Thus, other drugs such as antipsychotics, anxiolytics, antiemetics or antimigraine, which mainly effects on other serotonin receptors (5-HT1A, 5-HT1D, 5-HT3), do not carry high risk of serotonin toxicity\(^3\).

**Case Report**

Mr. S was a 38-year-old male who has schizophrenia diagnosed since his early adulthood. Prior to operation, he was on clozapine 800mg, amisulpiride 1200mg, epilim 1200mg and artane 6mg. Throughout his illness, he had never achieved full remission. He presented to emergency department with abdominal pain, diarrhea, generalized body weakness, hypotension and low GCS in which he was intubated and put on triple inotropes upon arrival. Abdominal CT revealed sigmoid volvulus. He underwent laparotomy where left hemicolectomy, bowel decompression and stoma was performed.

Several days post-operation, he developed complications of nosocomial pneumonia and surgical site infection. His psychiatric medication which has been withheld since admission was not reinitiated as he was still medically unstable. After a week post-operation, he developed persecutory delusion and was noted to be restless and agitated. Antipsychotics (haloperidol and amisulpiride) and epilim was reinitiated. Haloperidol was later switched to olanzapine as he still had persecutory delusion. Fluvoxamine 50mg/day was added as he also displayed hair-pulling behavior. He continued to be restless and uncooperative, pulling out branula and stoma bag. Olanzapine and amisulpiride was titrated up, Clopixol accuphase and parental sedation with midazolam and phenergen was given as adjunctive management. Several days after, he complained of muscle stiffness. In examination of mental status, Mr. S was restless and spoke in a stutter, but there was not disorientation. Central nervous system examination revealed rigidity of all limbs, tremors, hyperreflexia and clonus. There was no hyperthermia and his vitals were within normal range. The results of comprehensive biochemical, hematological profile and creatine phosphokinase were unremarkable. He was not on other medical drugs which could cause such clinical picture.

A diagnosis of serotonin syndrome was made. Fluvoxamine and amisulpiride were discontinued. Olanzapine was reduced to 20mg/day. Benzodiazepine was given as supportive management. There was dramatic improvement in his clinical picture with resolution of his neurologic signs within the first 24 hours.

**Discussion**

It was not well understood how this patient developed serotonin syndrome despite him on a single and low dose SSRI. Although it is widely accepted that the overstimulation primarily of the 5-HT2 receptors contribute to this condition, it is possible that complex interaction with other drugs that modulate the serotonergic system (in this case – olanzapine and amisulpiride) may result in serotonin toxicity\(^4\). There are however, only few reported cases of serotonin syndrome associated with atypical antipsychotics\(^5,6\). The authors also postulate that this patient may be at risk of developing serotonin toxicity due to the poor drug absorption that occur after bowel surgery. There is an anecdotal report of a patient developing lithium toxicity post bariatric surgery\(^7\). The mechanism of drug absorption post bowel surgery is still not well understood. Although a diagnosis of neuroleptic malignant syndrome was a possibility in this
case with the presentation of rigidity and the patient was exposed to a combination of antipsychotics, however, the absence of hyperthermia, a normal creatine phosphokinase level and presence of neurological findings of hyperreflexia, clonus and tremors favored a diagnosis of serotonin syndrome. His rapid recovery following discontinuation of medications fit more in line with the clinical picture of serotonin syndrome.

Serotonin syndrome remains a clinical diagnosis. There is no laboratory test to diagnose this condition. Hunter Toxicity Criteria Decision Rules, which have a sensitivity and specificity of 84% and 97% is commonly used to aid with diagnosis. From the experience of managing this patient, the author learnt an invaluable lesson which serves as a reminder to herself and her fellow budding psychiatrists – that although history taking skills, interviewing techniques and mental state examination are the fundamentals of our day-to-day clinical practice in psychiatry, one should not forget to always, always “touch the patient”.

References


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