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Fluoxetine-Induced Recurrent Hypoglycemia

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Abstract

Selective Serotonin Reuptake Inhibitors (SSRIs) are known to affect glucose metabolism and can cause hypoglycaemia in diabetic patients. There are two reports of SSRI-induced hypoglycaemia in non diabetic elderly females. We report fluoxetine induced recurrent hypoglycaemia in a non diabetic middle aged female with obsessive compulsive disorder, which has hitherto not been reported.

Keywords: Adverse Drug Reactions, Fluoxetine, Hypoglycaemia

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1. Introduction

Selective Serotonin Reuptake Inhibitors (SSRIs) are frequently recommended as a first-line treatment in depression. Literature reviewing depression in diabetics favors SSRIs due to reduced postprandial glucose excursions (Goodnick *et al.,* 1995). However, there are reports of SSRI-induced hypoglycaemia (Deeg and Lipkin, 1996; Takhar and Williamson, 1999) and hyperglycemia (Derijks *et al.,* 2008) in diabetic patients and hypoglycemia in an elderly non-diabetic woman (Pollak *et al.,* 2001; Zammit, 2012). This article reports a rare case of recurrent hypoglycemia following SSRI use in a non-diabetic middle-aged woman.

2. Case Report

A 35-year-old female diagnosed with obsessive compulsive disorder for last 5 years was started on fluoxetine 20 mg/day and gradually hiked to 40 mg/day over a period of 1 month. Her obsessions and compulsions improved significantly. However, she started having recurrent episodes of tiredness, feeling shaky, sweating, tremor, and pounding heartbeat. Patient consulted nearby hospital and investigation revealed hypoglycemia (RBS: 70 mg/dl). The patient was given injection dextrose infusion and symptoms got relieved. Patient had multiple similar episodes before and after the hospital consultation, which used to get relieved by taking glucose or other sweets.

The patient had no history of glucose intolerance or other cardiovascular or metabolic risk factors. She was taking no other medication except fluoxetine.

During next follow-up, the patient informed that 10 months prior to this event, she had similar symptoms and was hospitalized. The discharge summary revealed severe hypoglycemia (RBS: 46 mg/dl). The patient was investigated in detail, but no cause was found. The patient was on fluoxetine 40 mg/day and ranitidine 300 mg/day during that period.

Considering recurrent hypoglycemia when patient was on fluoxetine, it was decided to stop fluoxetine and review after 2 weeks. During the follow-up after 2 weeks, the patient was asymptomatic and had no hypoglycemic episodes, and her blood sugar level was within normal limits.

3. Discussion

Earlier reported cases of SSRI-induced hypoglycemia in non-diabetics were elderly woman with comorbid physical disorders (Pollak *et al.,* 2001; Zammit, 2012). Ours is the first case of fluoxetine-induced recurrent hypoglycemia

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in a middle-aged non-diabetic woman with no physical comorbidities. No other plausible causes of this adverse reaction could be identified in this case and according to Naranjo algorithm with a score of six, the hypoglycemic episodes occurring in our case was probably due to fluoxetine (Naranjo *et al.,* 1981). Moreover, the trial for attribution by stopping and restarting the medicine was done accidentally in our case, ruled out other alternative explanations.

Serotonin has been considered to be involved in glucose regulation via central 5-HT1A, 5-HT2A, and 5-HT2B/2C receptors (Yamada *et al.* 1999). SSRIs have shown to increase insulin sensitivity in both non diabetic and diabetic individuals (Araya *et al.,* 1995) and can cause hypoglycemia by impairing the central mechanisms that mediate hypoglycemia-induced hormonal counter-regulatory responses (Zammit, 2012).

SSRI-induced hypoglycemia is managed by administering glucose either orally or intravenously or intramuscular glucagon and withdrawal of the implicating medication (Zammit, 2012). Thus, our case suggests that hypoglycemic episodes can happen in non-diabetic physically healthy individuals on SSRI. Hence, treating physician should be aware about the risk and high degree of suspicion is warranted as hypoglycemia present at times with very vague and nonspecific symptoms.

4. Financial Support and Sponsorship

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5. Conflicts of Interest

There are no conflicts of interest.

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