Recurrent Iatrogenic Hypoglycemia Following Maprotiline Added to Citalopram in a Diabetic Woman- a Case report

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Abstract

Objective: Hypoglycemia with multiple etiologies is a common in diabetic patients. The current study describes the probability of interaction between Maprotiline, Selective Serotonine Reuptake Inhibitors like Citalopram for induction of hypoglycemia.

Case Presentation: A 47 year-old diabetic woman used Tablet Citalopram 20mg daily because of Generalized anxiety disorder from two years ago, but 1 week after prescription of Tablet Maprotiline 25mg at night, she had recurrent and symptomatic hypoglycemia episodes. After decline of dosage of Maprotiline, hypoglycemia was improved and follow discontinuation of it, was completely resolved.

Conclusion: The use of Maprotiline with Citalopram simultaneously may alter glycaemic control and induce a recurrent hypoglycemia and it is mentioned in the "warnings and precautions for implication". Of course the clinically relevant adverse drug responses may not recognized in clinical practice.

Keywords: Selective serotonin reuptake inhibitors, Hypoglycemia, Diabetic.

Introduction

Hypoglycemia is a common presentation in diabetic patients. The hypoglycemia may be due tomultiple etiologies including regulatory, enzymatic, or substrate impairment. One of the most prevalent etiologies is medications. Among medications, it is less attention to psychiatric agents like Tricyclic antidepressants (TCA) and Selective Serotonin Reuptake Inhibitors (SSRIs) (1).

In diabetic patients, SSRIs can alter the glycemic control. It will be necessary to balance of the dosage of insulin and oral anti-diabetic drugs (2).

As another hypoglycemic causes, it is showed that elevation of insulin sensitivity and secretion, possibly leading to hypoglycemic responses (3).

It is rarely reported that Fluoxetine and Sertraline were been suggested as etiology of diabetes. Sertraline can cause secretion of

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epinephrine from adrenal medulla and cause hypoglycemia (4,5).

In a case report, it has been reported recurrent hypoglycemia following SSRIs medication in a non-diabetic elderly female (6). It is suggested that hypoglycemia follow Fluoxetine use maybe because of weight loss (7).

But in other study on twelve obese patients, it was suggested that the recovery in insulin sensitivity by Fluoxetine use is not related to weight loss and may be effective in the treatment of insulin resistant obese patients. In that study, sex hormone binding globulin (SHBG) was accelerated (8).

We found two case reports about Maprotiline induced hypoglycemia in review literature (9,10).

About Citalopram, there are rare reports but with unknown etiology. It has been shown that hypoglycemia was happened fast follow onset of use and resolved rapidly after discontinuation of drug.

As anatypical presentation of serotonin syndrome SSRIs may induce hypoglycemic unawareness follow autonomic dysregulation (11).

Case Presentation

A menopause47 years old married woman who suffers from diabetic since 30 years ago. She used anti-diabetic agents Include Insulin NPH 25 Unit/ BID, Insulin Regular 20 Unit/ BID, Tablet Metformine 500 mg/BID with Aspirine 80 mg/daily, Levostatine daily. She used Tablet Citalopram 20 mg /daily because of Generalized anxiety disorder (The symptoms include: anticipatory anxiety, insomnia, tremor, palpitation) from two years ago, but after onset of Tablet Maprotiline 25 mg at night (Nearly 2 months ago), she had recurrent and symptomatic hypoglycemia episodes (FBS<69 mg/dl). She experienced anxiety, agitation, numbness, nightmare, sweating, shakiness, palpitation and suffering. The hypoglycemic episodes had a significant impact on her quality of life .But all of significant etiology of hypoglycemic attack were rolled out. She didn't overdosing on the medications to treat diabetes intentionally or unintentionally.

Therefore, as history of psychiatric disorder, her physician decided refer her to a psychiatrist. After take a history, the diagnosis of GAD was established without history of substance or alcohol use and positive familial history for diabetes and psychiatry disorder. The psychiatrist suggested to remove the Maprotiline. After decrease of Maprotiline dosage, hypoglycemia was improved and follow discontinuation of it, was completely resolved soon. In next visits by Internal specialist, blood glucose level was controlled in range of 110-190 mg/dl well and the patient was satisfied for her status. In spite of removal of Maprotiline, anxiety symptoms were declined.

Discussion

We introduced a middle-age woman that she had recurrent hypoglycemia attacks. In this study, we highlighted the relationship between diabetes mellitus and psychiatric drugs. Also, remember and explain the effects of psychiatric drugs on blood glucose level and interfere with anti-diabetic agents.

In a study, it was been shown that SSRIs are preferable in nondiabetic patients with depressed mood since improve glucose control in the short time. In the other hand, depressed patients comorbid with DM-II, only confirmed antidepressants drugs for glycemic control are SSRIs groups (12). But we found any report about augmentation of Citalopram and Maprotline and its effect on glycemia.

The drugs like TCAs, Fluoxetine and Maprotiline lonely can cause hypoglycemia that eventually it can be threatening (4,8,11). But we didn't find reports about Citalopram plus Maprotline for recurrent hypoglycemia.

If a patient deliberately manipulates serum glucose by antidiabetics agents or induce hypoglycemia, it is a factitious hypoglycemia that is type of factitious disorder (13-15).

According to past psychiatry history, our patient did not feigning or exaggerating

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primary or secondary gain. Therefore, we ruled out malingering and factitious disorder.

It has been shown that SSRIs can accelerate insulin sensitivity in both non-diabetic and diabetic patients (16,17). Although, our patient did not report hypoglycemia during Citalopram use. But after adding Maprotiline hypoglycemia started. But perhaps this phenomenon is because of its effect on hypersensitivity of receptors to insulin or accumulative synergistic effect of Maprotiline and Citalopram or a dual mechanism.

Diabetes mellitus is a chronic endocrinopathy. Therefore, the component of psychiatric is common and significant usually. The depressive and anxiety disorders can be comorbid with diabetes mellitus. Therefore, take a precious drug history and consideration of drug interactions are very important and vital. Some diabetic patients will be resistant to treatment. Perhaps it be possible that antidepressant agents can aid physicians as an effective adjunctive therapy about these patients for decrease of catecholamine release, improve habitual foods, prevent of hyperphagea and weight gain and finally improvement in blood glucose control.

Conclusion

Maprotiline with Citalopram may alter glycaemic control and it is mentioned in the "warnings and precautions for implication". Of course the clinically relevant adverse drug responses may not recognized in clinical practice. Hence, we suggest that internal physicians should rule out SSRIs and/or Maprotiline use as probable cause of hypoglycemia in diabetic and non-diabetic patients that manifest with recurrent episodes of symptomatic or non symptomatic hypoglycemia.

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