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Case Report

Mental Symptoms after Dulaglutide Therapy: A Case Report

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Introduction

Diabetes is a chronic metabolic disease and is one of major health problem in worldwide, in international guidelines, type 2 diabetes (T2D) therapy includes diet and control blood sugar followed by oral and/or injectable therapies [1]. In Taiwan, there were over 1.958.000 patients of diabetes in 2017, and the prevalence of diabetes in adults is 10.9% [2].

Recently evidence in pharmacological research for T2DM treatment targeting the Glucagon like peptide-1(GLP-1) has provided the benefit effect on T2DM by providing effective, safe, sustained glycemic management [3]. Dulaglutide is a long-acting GLP-1 analog for the treatment of type 2 diabetes mellitus (T2DM). According to previously research, more 5% of population reported that adverse effects like nausea, abdominal pain, diarrhea, vomiting, decreased appetite, dyspepsia, and fatigue [4]. The purpose of this report is to create professional awareness of these potentially psychological adverse effect during Dulaglutide to improve the management of these side effect in patients who receive Dulaglutide treatment.

Here, we reported the 62-year-old woman patient has the underlying disease of T2DM for 19 years with symptoms of microscale albuminuria, under Gliclazide, Metformin, Pioglitazone, Linagliptin control. Her mother and her 3 of 4 sisters also have history of type 2 DM but without psychological disorders. She regularly came back to our outpatient clinic for follow up, hemoglobin A1c (HbA1c) was around 7.6-8.2 in recent 2 years.

In our knowledge, depression occurrence is demonstrated that two to three times higher in people with DM by pathophysiological mechanisms as psychological stress and systemic or local inflammation [5]. She has tried to receive Dulaglutide instead Linagliptin since 25th April 2018. According to the statements, some side effects that were not recorded in package insert were mentioned after the patient received first dose of Dulaglutide (Table1).

Table 1: The symptoms in patient with Dulaglutide therapy.

Symptoms	Subjective/Objective Data	Include/Exclude Drug Effect
Fatigue	Easily feel tired.	Documented
Dejection	Escape from the reality and feel crying.	Undocumented
Apathy, loss of interesting	Do not want to interact with other people, and do not want to do anything, even work.	Undocumented
Impaired concentration	Cannot find the key in her bag and miss bus stop.	Undocumented
Poor appetite	Feel nausea, and vomiting. Poor apatite.	Documented

The symptoms are shown in the table below Table 1 and reported is or not documented respectively. Symptoms, like apathy, impaired concentration got worse in day 4 but without hypoglycemia. These symptoms were considered due to Dulaglutide because they were recovered in day 7 after she stopped using.

The common adverse effects recorded in package insert of Dulaglutide were gastrointestinal symptoms, like nausea, vomiting, diarrhea, and poor appetite [6,7]. Other side effects like hypoglycemia, tachycardia, and allergy were also reported. We reviewed the package insert and literature, lack of the report about mental symptoms were reported. However, in this case report, we observed that Dulaglutide may have some undocumented psychological side effect.

Actually, the present case report has several limitations. For first depressive episode, to rule out other possible reasons, like acute delirium, anemia, stroke, or brain lesion. Serum hemoglobin, electrolytes, ammonia, vitamin B12, folate, and ferrous ion are needed to be checked. Other causes that may affect are also needed, like thyroid and adrenal function. However, the surveys did not be arranged because patient came back to our out-patient department 1 month later after discontinued the drug by herself. She also did not ask for any help during this period. Therefore, the drug interaction could not exclude.

Mental symptom is difficult to define in clinical settings. Although we routinely rely on clinical data, most explanations of how to interpret diagnostic result are confined to exam reports. Yet observed psychologic symptoms or signs often produce far more powerful support of diagnostic hypotheses than we can ever derive from the laboratory. Importantly, in this patient, only one drug alternation during this episode is Dulaglutide, and symptoms actually got vanished when stopped Dulaglutide using. According to the information about the symptoms by patient's memories and statements, Naranjo scale was 3 points [8]. Thus, we assumed that these mental symptoms were associated with Dulaglutide. Patients who did not have past history of psychiatric disorder complained of psychosis symptoms after using Dulaglutide, if still unknown reasons of psychiatric disorder after complete survey, drug adverse effect of Dulaglutide should be considered.

In the present report, we found the mental adverse effect of Dulaglutide in our patient. The comprehensive mechanisms underlying the relationship of Dulaglutide on mental symptoms will require further investigation, these assumptions point to new insight for future experiment that to establish adverse effect record for the Dulaglutide.

2. Availability of Data and Materials

All data generated or analyzed during this study are included in this published article.

3. Ethics Approval and Consent to Participate.

This study was approved by the Taipei medical University Hospital Institutional Review Board for Clinical Research (approval No. N201904008), and it conforms to the provisions of the Declaration of Helsinki.

Acknowledgement

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Conflicts of interests

Author has no conflicts of interests.

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