

# A Case of Idiopathic Postprandial Syndrome in a Middle-Aged Nigerian Woman

Damilola A. Jesuyajolu<sup>1\*</sup>, Abdulhafeez Mohammed<sup>2</sup>, Charles Okeke<sup>3</sup>, Armstrong Nicholas<sup>4</sup>

<sup>1</sup>Department of Surgery, First Graceland Hospitals, Lagos, Nigeria

<sup>2</sup>Department Medicine, Top Medics Hospital, Ilorin, Nigeria

<sup>3</sup>Department Medicine, EYN Primary Healthcare Center, Adamawa

<sup>4</sup>Department of Gynaecology, Umaru Shehu Ultramodern Hospital, Maiduguri

\*Corresponding author: [dami.jesuyajolu@gmail.com](mailto:dami.jesuyajolu@gmail.com)

Received January 03, 2022; Revised February 05, 2022; Accepted February 11, 2022

**Abstract** Not much has been reported about Idiopathic Postprandial syndrome, especially in Africa. Many cases are often wrongly diagnosed as reactive hypoglycemia. Idiopathic postprandial syndrome refers to signs and symptoms of hypoglycemia in the absence of low blood sugar occurring after meals and is of unknown cause. We report a case of Idiopathic Postprandial Syndrome in a 44-year old woman living in Nigeria. We present a 44-year-old woman who has been having recurrent hypoglycemic symptoms, which include dizziness, body weakness, lightheadedness, restlessness, headaches, and fatigue after she eats a meal (Post-prandial) for a year. Blood glucose is normal during episodes, and extensive examinations and investigations yielded no other cause. Idiopathic postprandial syndrome (IPS) is a condition in which an individual experiences symptoms of hypoglycemia without having biochemical evidence. The major difference between idiopathic postprandial syndrome (IPS) and hypoglycemia is that IPS may present with only symptoms of low blood sugar without the other components of Whipple's triad. These symptoms usually occur within a few hours of eating and the exact cause is not known. Managing the possible identified triggers, dietary modification and the use of alpha-glucosidase inhibitors have been seen to improve the condition. Much work still needs to be done to identify the exact etiology of the syndrome.

**Keywords:** *postprandial syndrome, hypoglycemia, idiopathic postprandial, adrenergic symptoms, Whipple's triad*

**Cite This Article:** Damilola A. Jesuyajolu, Abdulhafeez Mohammed, Charles Okeke, and Armstrong Nicholas, "A Case of Idiopathic Postprandial Syndrome in a Middle-Aged Nigerian Woman." *American Journal of Medical Case Reports*, vol. 10, no. 2 (2022): 42-44. doi: 10.12691/ajmcr-10-2-6.

## 1. Introduction

Hypoglycemia is described as blood sugar of less than 3.0mmol/L in normal individuals and 3.9mmol/L in diabetic patients; this is often accompanied by adrenergic symptoms which resolve on ingestion of glucose meals [1]. The term idiopathic postprandial syndrome refers to signs and symptoms of hypoglycemia in the absence of low blood sugar occurring after meals and is of unknown cause [2].

Kosuda et al. [3] evaluated patients with postprandial symptoms, and it was seen that some had blood glucose within the normal reference range despite the presence of signs and symptoms seen in hypoglycemia. Ivan et al. [4] also demonstrated adrenergic symptoms in some patients following oral glucose ingestion despite the normal blood glucose levels.

Charles et al. [2] studied the relationship between idiopathic postprandial hypoglycemia and glucose homeostasis. However, the study could not identify abnormalities of glucose homeostasis which could have explained the hypoglycemic-like signs and symptoms the

patients experienced. They concluded that this disorder should be termed idiopathic postprandial disorder to avoid the wrong label of "chemical hypoglycemia" since the blood glucose readings were normal [2].

Some of these patients with symptoms of hypoglycemia, despite normal blood glucose readings, are often wrongly labeled as reactive or postprandial hypoglycemia, hence the need for further study on this clinical problem. This will encourage the use of the terminology "idiopathic postprandial syndrome". It describes the timing of the event without the wrong nomenclature of "hypoglycemia".

In this paper, we present a case of a middle-aged woman with the idiopathic postprandial syndrome. To the best knowledge of the authors, no such peer-reviewed case has ever been reported from Africa, hence the need for this report.

## 2. Case Presentation

The index patient is a 44-year-old woman who has been having recurrent hypoglycemic symptoms, which include dizziness, body weakness, lightheadedness, restlessness,

headaches, and fatigue after she eats a meal (Post-prandial). This has been going on for a year. There was no known incident that happened prior, and she is not a known diabetic. She is not on any regular medications nor does she use any anti-diabetic medications. She has no symptoms of liver or renal failure. She does not drink alcohol or smoke. Her dietary habits, before diagnosis, varied between staple foods and processed meals.

On examination, she was afebrile, not cyanosed, not dehydrated, did not have pedal edema nor did she have generalized lymphadenopathy. She experienced increased heart rate values which ranged between 100bpm and 130

bpm after meals. All other examination findings were normal.

The initial working assessment was reactive hypoglycemia. Baseline investigations which included a Full Blood Count and Monitored blood sugar levels after meals at 30 minutes intervals were carried out. The Full blood count was essentially normal, and the blood sugar measurements taken at 30 minutes intervals up to 3 hours showed consistent values between 5mmol/l and 8 mmol/l despite the occurrence of these hypoglycemic symptoms. All parameters in the Electrolytes, Urea, and Creatinine test as well as the Liver Function Tests were equally within normal limits.

Date Entered	15/12/2021 12:25:11	Address	ILORIN, ILORIN
Date Printed	30/12/2021 10:57:21		
Collection date	15/12/2021 08:26:00	Specimen Type	SST
		Clinical Data	NONE PROVIDED

*Thank you for your request. We are reporting the following results:*

Chemistry - Validated		
TEST NAME	RESULT	REFERENCE RANGE / ( UNITS )
Insulin Fasting	11.3	2 - 25 uU/mL
Comment:	<p>Interpretation Single elevated level (&gt; 20 uU/mL) together with a fasting hypoglycaemia (&lt; 2.5 mmol/L) can indicate primary hyperinsulinaemia.</p> <p>In early insulinoma/hyperplasia of B-cells, a prolonged fasting of up to 48 hours and correlating 5-insulin &amp; glucose levels can be more sensitive to identify oversecretion.</p> <p>Glucose value of &lt; 3 mmol/L or more than 2.0 mmol/L below fasting levels with a high insulin level (&gt; 30 uU/mL) can also indicate inappropriate insulin response (reactive hypoglycaemia).</p> <p>A peak insulin level during a diabetic glucose tolerance curve of:</p> <p>a) &gt; 60 uU/mL indicates diabetes mellitus that can be controlled by diet alone (adequate pancreatic reserve).</p> <p>b) &lt; 40 uU/mL indicates a high risk for microvascular complications (absolute insulin deficiency, decreased pancreatic reserve).</p>	

**Figure 1.** Test result showing normal insulin levels

Date Entered	12/11/2021 13:17:14	Address	NO 1, STADIUM ROAD, OPP. CIRCULAR HOTEL, ILORIN
Date Reported	01/12/2021 14:17:02		
Collection date	12/11/2021 11:25:00	Specimen Type	Serum
		Clinical Data	NOT AVAILABLE

*Thank you for your request. We are reporting the following results:*

Chemistry - Validated		
TEST NAME	RESULT	REFERENCE RANGE / ( UNITS )
Amylase Serum	79	25 - 125 U/L
Comment:	<p>*Schumann G, Aoki R, Ferrero CA, Ehlers G, Ferard G, Gella FJ, et al. IFCC primary reference procedures for the measurement of catalytic activity concentrations of enzymes at 37 °C. Part 8. Reference procedure for the measurement of catalytic concentration of alpha-amylase. Clin Chem Lab Med 2006;44:1146-55.</p>	
Lipase	62	< 67 U/L

**Figure 2.** Test result showing normal serum amylase and lipase results

Further investigations were carried out to assess the possible cause of this phenomenon. She had a fasting insulin test done to check for any abnormality. As can be seen in [Figure 1](#), the insulin level was normal. She had a serum amylase and lipase done which yielded normal results. (Amylase- 79 U/L, Lipase 62 U/L). Results in [Figure 2](#). She also had a Computed Tomography scan of the abdomen to exclude any intra-abdominal lesion, however, the results were normal.

A final diagnosis of the idiopathic postprandial syndrome was made. She was placed on an Alpha-glucosidase inhibitor and was counseled on the need to eat a high-fiber diet. She was followed up in a month and she reported a mild improvement.

### 3. Discussion

Hypoglycemia is diagnosed by Whipple's triad which is made up of low plasma glucose level, symptoms of hypoglycemia, and symptomatic relief with correction of the hypoglycemia [1]. While several factors can be responsible for symptoms of hypoglycemia, idiopathic postprandial syndrome is not a common cause. In most situations, hypoglycemia can be seen to be in a fasting state or in diabetic patients where it is usually attributed to the drugs used in diabetes control.

Idiopathic postprandial syndrome (IPS) is a condition in which an individual experiences symptoms of hypoglycemia without having biochemical evidence. Hence, the patient may experience hypoglycemic symptoms such as shakiness, irritability, palpitations, pallor, hunger, anxiety, confusion, etc. IPS does not lead to very serious immediate and long-term complications such as seizures, coma, and brain damage. The blood glucose may be within normal range and administration of glucose may not cause an improvement in the symptoms. The major difference between idiopathic postprandial syndrome (IPS) and hypoglycemia is that IPS may present with only symptoms of low blood sugar without the other components of Whipple's triad [5]

These symptoms usually occur within a few hours of eating and the exact cause is not known. However, possible triggers identified so far with ongoing research include eating heavy carbohydrate meals, excessive consumption of alcohol, exogenous insulin production, excessive catecholamine release in stressful conditions, blood glucose levels being in lower limits of the normal range, renal diseases, rapid dropping of blood glucose levels from higher limits to lower limits of the normal range, etc. [6]

The index patient had hypoglycemic features highlighted earlier but finding the cause proved difficult. Given that she was not diabetic or on any hypoglycemia-inducing medication, that ruled out such cause of her symptoms. Other possible causes such as alcohol ingestion and stressful events were ruled out. Furthermore,

radiological studies of the abdomen didn't give findings suggestive of an insulinoma, nor did the serum insulin. The amylase, and lipase levels, as well as liver, kidney, and thyroid function tests, were within the normal range.

The treatment for IPS entails identifying possible triggers and managing them. These could include dietary modification such as reducing the number of meals taken per time while increasing frequency and taking foods rich in fiber and less in glycemic index such as lean proteins. Other measures include cutting down on alcohol consumption and refined carbohydrates intake. A further step above lifestyle modification includes the use of medications such as alpha-glucosidase inhibitors [7]. In the index patient dietary modification was advised. She was also commenced on the above-named medication after which some improvement was seen.

### 4. Conclusion

The recognition of postprandial syndrome is very important as this would enable clarity for both the physician and the patient. It can be argued to be a diagnosis of exclusion, like in the case of this index patient. More work needs to be done to shed more light on the etiology of Idiopathic Postprandial Syndrome as well as to elucidate more effective treatments.

### Acknowledgements

There was no funding for this paper. Consent was taken from the patient before the writing of this paper.

### References

- [1] P.E. Cryer, L. Axelrod, A.B. Grossman, S.R. Heller, V.M. Montori, E.R. Seaquist, F.J. Service, Evaluation and Management of Adult Hypoglycemic Disorders: An Endocrine Society Clinical Practice Guideline, *J. Clin. Endocrinol. Metab.* 94 (2009) 709-728.
- [2] M.A. Charles, F. Hofeldt, A. Shackelford, N. Waldeck, L.E. Dodson, D. Bunker, J.T. Coggins, H. Eichner, Comparison of oral glucose tolerance tests and mixed meals in patients with apparent idiopathic postabsorptive hypoglycemia: absence of hypoglycemia after meals., *Diabetes.* 30 (1981) 465-70.
- [3] M. Kosuda, K. Watanabe, M. Koike, A. Morikawa, H. Saito, G. Kohno, H. Ishihara, Glucagon responses to glucose challenge in patients with idiopathic postprandial syndrome, *J. Nippon Med. Sch.* (2021) JNMS.2022\_89-205.
- [4] A.J.P. Ivan B, Andre G, Catherine L, Francois C, Suspected postprandial hypoglycemia is associated with beta adrenergic hypersensitivity and emotional distress, *J. Clin. Endocrinol. Metab.* 79 (2007) 1428-1433.
- [5] H.M. Lawler, Idiopathic Postprandial Syndrome, *Manag. Patients with Pseudo-Endocrine Disord.* (2019) 91-97.
- [6] Idiopathic Postprandial Syndrome: Signs, Symptoms, and More, (n.d.). <https://www.healthline.com/health/idiopathic-postprandial-syndrome> (accessed January 15, 2022).
- [7] Y. Altuntaş, Postprandial Reactive Hypoglycemia, *Sisli Etfal Hastan. Tip Bul.* 53 (2019) 215-220.

