

# Managing diabetes with amylin: A key hormone in glucose metabolism

Adryan Jitao\*

**Received:** 20-Aug-2024, Manuscript No. FMDM-24-151398; **Editor assigned:** 22-Aug-2024, PreQC No. FMDM-24-151398 (PQ); **Reviewed:** 06-Sep-2024, QC No. FMDM-24-151397; **Revised:** 12-Sep-2024, Manuscript No. FMDM-24-151398 (R); **Published:** 20-Sep-2024, DOI: 10.37532/1758-1907.2024.14(5).665-666.

## Description

Amylin is a peptide hormone produced by the beta cells of the pancreas, co-secreted with insulin in response to food intake. Although it is less well-known than insulin, amylin plays a significant role in the regulation of blood sugar levels and overall metabolic health. Understanding amylin's functions and implications can enhance our comprehension of diabetes management and treatment.

Amylin, also known as Islet Amyloid Poly Peptide (IAPP), is a 37-amino-acid peptide that has several important roles in glucose metabolism. It is released into the bloodstream along with insulin when blood sugar levels rise after eating.

### ■ Functions of amylin

**Slowing gastric emptying:** One of amylin's primary functions is to delay gastric emptying, the process by which food leaves the stomach and enters the small intestine. This action helps prevent rapid spikes in blood sugar levels after meals.

**Suppressing glucagon secretion:** Amylin inhibits the secretion of glucagon, a hormone that raises blood sugar levels by stimulating glucose release from the liver. By reducing glucagon levels, amylin helps maintain stable blood glucose.

**Promoting satiety:** Amylin contributes to feelings of fullness after meals, which can help regulate food intake and prevent overeating. This satiety effect is particularly important for weight management.

**Protecting beta cells:** Research suggests that amylin may have a protective effect on pancreatic

beta cells, helping to maintain their function and reduce the risk of diabetes-related complications.

### ■ Amylin and diabetes

In individuals with type 1 and type 2 diabetes, the production of amylin is often impaired or absent. This deficiency can contribute to poor blood sugar control and increased postprandial (after-meal) glucose levels.

**Type 1 diabetes:** In this condition, the immune system attacks and destroys insulin-producing beta cells, leading to a complete absence of both insulin and amylin.

**Type 2 diabetes:** While insulin is typically present in this form of diabetes, amylin levels may be reduced or ineffective, contributing to the challenges of managing blood glucose levels.

### ■ Pramlintide: A synthetic amylin analog

Pramlintide, sold under the brand name Symlin, is a synthetic analog of amylin used in the management of diabetes. It mimics the actions of natural amylin and provides several benefits:

**Improved glycemic control:** By slowing gastric emptying and reducing glucagon secretion, pramlintide helps lower postprandial blood sugar levels.

**Weight management:** Many individuals using pramlintide experience a reduction in appetite, aiding in weight loss or maintenance, which is particularly beneficial for those with type 2 diabetes.

**Flexible dosing:** Pramlintide can be used alongside insulin therapy, allowing for more personalized diabetes management.



Department of Endocrinology, Zamfara State University, Zamfara State, Nigeria

\*Author for correspondence: E-mail: jitao@gmail.com

**■ Potential side effects of pramlintide**

While pramlintide can be highly effective, it may also cause side effects, including:

**Nausea:** This is the most common side effect, especially when starting the medication, but it often decreases over time.

**Hypoglycemia:** There is an increased risk of low blood sugar when pramlintide is used with insulin. Careful monitoring is essential.

**Injection site reactions:** Some users may experience discomfort, redness, or itching at the injection site.

Amylin plays a vital role in regulating blood sugar levels and overall metabolic health. Understanding its functions provides valuable insights into diabetes management, highlighting the importance of maintaining balanced hormone levels. For those with diabetes, therapies like pramlintide offer a promising avenue for enhancing glycemic control and improving quality of life. As research continues to unveil the complexities of amylin and its impact on health, we gain a deeper appreciation for this significant hormone and its potential role in diabetes care.