SymlinPen® (pramlintide acetate) pen-injector

INDICATION

SYMLIN® (pramlintide acetate) injection is indicated as an adjunctive treatment in adults with type 1 or type 2 diabetes who use mealtime insulin therapy and who have failed to achieve desired glucose control despite optimal insulin therapy.

IMPORTANT SAFETY INFORMATION

WARNING: SEVERE HYPOGLYCEMIA

SYMLIN use with insulin increases the risk of severe hypoglycemia, particularly in patients with type 1 diabetes. When severe hypoglycemia occurs, it is seen within 3 hours following a SYMLIN injection. Serious injuries may occur if severe hypoglycemia occurs while operating a motor vehicle, heavy machinery, or while engaging in other high-risk activities. Appropriate patient selection, careful patient instruction, and insulin dose reduction are critical elements for reducing this risk.

Please click here for US Full Prescribing Information for SYMLIN, including **Boxed WARNING** regarding severe hypoglycemia.

	Type 1 Diabetes		
	Trial 1 (Whitehouse et al[1])	**Trial 2** (Data on File[2])	**Trial 3** (Ratner et al[3])
Study purpose	Evaluate efficacy and safety of pramlintide plus insulin compared to insulin alone	Evaluate efficacy and safety of pramlintide plus insulin compared to insulin alone	Evaluate efficacy and safety of pramlintide plus insulin compared to insulin alone
Study design	52-week, phase 3, double-blind, randomized, placebo-controlled, parallel-group, multicenter	26-week, phase 3, double-blind, randomized, placebo-controlled, parallel-group, multicenter	52-week, phase 3, double-blind, randomized, placebo-controlled, parallel-group, multicenter
Key inclusion criteria	Adult patients aged 16-70 with type 1 diabetes for at least 1 year and inadequate glycemic control (A1C ≥ 7.0% and ≤ 13.0%) who were free from symptoms of severe hyper- and hypoglycemia for 2 weeks before screening; stable insulin dosing (no more than +/- 10%) for 1 week before start of study	Adult patients aged ≥ 16 with type 1 diabetes for at least 1 year and inadequate glycemic control (A1C ≥ 8.0%); stable insulin dosing (no more than ± 10%) for at least 2 months prior to the study	Adult patients aged 16-76 with type 1 diabetes for at least 1 year and inadequate glycemic control (A1C ≥ 8.0%) who were free from symptoms of severe hyper- and hypoglycemia for 2 weeks before screening; stable insulin dosing (no more than +/- 10%) for at least 2 months prior to study
Patient populations	N = 480, MDD: 16.8 years, Mean A1C: 8.8%	N = 586, MDD: 15.9 years, Mean A1C: 9.0%	N = 651, MDD: 18.7 years, Mean A1C: 8.9%
Dosing	Pramlintide 30 mcg or placebo QID in addition to existing insulin regimens. At week 20, patients were re-randomized to pramlintide 30 mcg or 60 mcg QID if A1C reduction was < 1% at week 13	In addition to insulin: placebo or pramlintide 90 mcg BID, 60 mcg TID, or 90 mcg TID	In addition to insulin: placebo QID or pramlintide 60 mcg at breakfast, lunch, and dinner; 60 mcg QID; or 90 mcg TID
Primary efficacy endpoint	Change in A1C at week 52	Change in A1C at week 26	Change in A1C at week 26
Selected secondary and other endpoints	Change in body weight, change in insulin use, percent of patients achieving glycemic targets	Change in body weight, change in insulin use	Change in body weight, change in insulin use

Abbreviations: BID, two times daily; MDD, mean duration of diabetes; QID, four times daily; TID, three times daily.

References:

1. Whitehouse F, Kruger DF, Fineman M, et al. A randomized study and open-label extension evaluating the long-term efficacy of pramlintide as an adjunct to insulin therapy in type 1 diabetes. *Diabetes Care*. 2002;25(4):724-730.

2. Data on File. 2991508. AstraZeneca Pharmaceuticals LP.

3. Ratner RE, Dickey R, Fineman M, et al. Amylin replacement with pramlintide as an adjunct to insulin therapy improves long-term glycaemic and weight control in type 1 diabetes mellitus: a 1-year, randomized controlled trial. *Diabet Med*. 2004;21(11):1204-1212.