Adjunct Treatment in Type 1 Diabetes Mellitus

T1D is a Disease of Insulin Deficiency, Requiring Insulin Replacement Therapy

- The Roles of Insulin
  - Decreases the concentration of glucose in blood
  - Stimulates the liver to store glucose in the form of glycogen
  - Facilitates entry of glucose into muscle, adipose and several other tissues
  - Promotes synthesis of fatty acids in the liver when glycogen levels are high
  - Inhibits breakdown of fat in adipose tissue

T1D Affects Approximately 30 Million Patients Worldwide

- ALL Patients With T1D Require Insulin
- 75% to 80% of patients with T1D are adults
- 20% to 25% are younger patients

Patients With T1D Often Fail to Meet Clinical Goals

- HbA1C >7.0%
- HbA1C <7.0%
- Many patients with T1D are overweight/obese

Non-Insulin Adjunct Therapies Have Been Ineffective

- Amylin analogs: pramlintide
- Biguanide antihyperglycemic agent: metformin
- Bile acid sequestrants: coleselvelam
- GLP-1 analogs: dulaglutide
- DPP-IV inhibitors: sitagliptin
- Combination therapies: metformin + DPP-IV

Purpose of adjunct therapy in T1D is not:
- Replacing insulin
- Decreasing insulin doses, per se

Ideal Adjunct Therapy for T1D Must Meet Certain Criteria

- Facilitate entry of glucose into muscle, adipose and several other tissues
- Promote synthesis of fatty acids in the liver when glycogen levels are high
- Inhibit breakdown of fat in adipose tissue

References