GLP-1 Agonists and Long-Acting Insulin Combination Therapy

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Disclosure

- I have no conflicts of interest to disclose.

Objectives

- At the end of this presentation, the audience should be able to:
  - Explain the mechanism of GLP-1 agonists
  - Identify advantages and disadvantages of combination GLP-1 agonists and long-acting insulin combination products
  - Discuss the potential role in therapy of GLP-1 agonist and long-acting insulin combination products

Long-Acting Insulin

- Lower blood glucose (BG) throughout the day
- Does not target post-prandial BG (PPBG)
- Dosed once or twice daily

Glucagon-like Peptide-1 Agonists (GLP-1)

- Benefits:
  - Weight loss
  - Glucose-dependent mechanism
  - Lower A1C 1-1.5%
- Side effects:
  - Nausea, HA, diarrhea
  - Pancreatitis
- BBW:
  - Medullary thyroid carcinoma
  - Multiple endocrine neoplasia syndrome 2 (MEN2)

GLP-1 Receptor Agonists

- exenatide (Byetta®, Bydureon®)
- liraglutide (Victoza®)
- albiglutide (Tanzeum®)
- dulaglutide (Trulicity™)
- Lixisenatide (Adlyxin®)

Potential Role in Therapy

- ADA Standards of Care 2017
- Safety
- Efficacy

Soliqua (insulin glargine and lixisenatide)

- Available in retail pharmacies January 2017
- FDA Approved Indication: patients with Type 2 diabetes who are uncontrolled on basal insulin (<60 units per day) or lixisenatide
- Formulation: Fixed dose insulin glargine 100 units/mL and lixisenatide 33 micrograms/mL
- Maximum Daily Dose: 60 units insulin glargine/20 mcg of lixisenatide

Xultophy (insulin degludec and liraglutide)

- Available in retail pharmacies May 2017
- FDA Approved Indication: Once daily as adjunct to diet and exercise in patients with Type 2 diabetes inadequately controlled on basal insulin (<50 units/day) or liraglutide
- Formulation: Fixed dose insulin degludec 100 units/mL and liraglutide 3.6 mg/mL
- Starting: 16 units/0.58 mg liraglutide
- Maximum Daily Dose: 50 units insulin degludec/1.8 mg liraglutide

Combination Therapy

Advantages
- Once daily injection
- Works on fasting and post-prandial blood glucose
- Lower risk of hypoglycemia
- Weight loss

Disadvantages
- Maximum dosage
- Cost
- Side effects from GLP-1

Conclusion

- GLP-1 agonists are effective therapies for treatment of type 2 diabetes
- GLP-1 agonist and long-acting insulin combination therapies may have a role in therapy in treatment of type 2 diabetes
- Uptake into practice still to be determined

Question 1: Which of the following is an advantage of the use of a GLP1 receptor agonist in type 2 diabetes?

a) Weight loss
b) Improvement in fasting blood glucose
c) Lack of GI side effects
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Question 2: What is a disadvantage of the use of a GLP1 + LA insulin combination therapy when compared to LA insulin + bolus insulin?

a) Excess hypoglycemia

b) Maximum dose

c) Weight gain

Question 3: Which of the following patients would the most appropriate candidate for the use of a GLP1 + LA insulin combination therapy?

a) 45 yo M with A1C 8.2% on Lantus 20 units once daily and metformin 1000 mg twice daily

b) 62 yo F with A1C 6.5% on metformin 1000 mg twice daily and empagliflozin 10 mg once daily

c) 36 yo M with A1C 9.0% Lantus 40 units twice daily

References