DPP-4 Inhibitors: ‘GLIPTINS’

FLAME LECTURE: 5
HARBOLOVIC 10.15.18
LEARNING OBJECTIVES

- To understand the mechanism of action of DPP-4 inhibitors
- To counsel the patient regarding the benefits, risks, and uses for DPP-4 inhibitors
- Prerequisites:
  - NONE
- See also – for closely related topics
  - FLAMEs on Type 2 DM / Medications for treatment of DM
OVERVIEW

- Second line oral agent used in the management of T2DM
- Includes the following medications in the USA:
  - Sitagliptin (Januvia)
  - Saxagliptin (Onglyza)
  - Linagliptin (Tradjenta)
  - Alogliptin (Nesina)
- Generally used in pts who do not respond to (or are intolerant of) Metformin, sulfonylureas, or thiazolidinediones
Dipeptidyl peptidase 4 (DPP-4) acts to inhibit incretins GIP and GLP-1 at the pancreatic islets.

- Thus, DPP-4 inhibitors (gliptins) work by inhibiting the DPP-4 enzyme from inactivating these incretins.

- The incretins GIP and GLP-1 are involved in stimulating insulin production and inhibiting glucagon release.
INDICATIONS / BENEFITS

- Used as an adjunct when diabetes is refractory to monotherapy, or when pts have contraindications like chronic kidney disease
- Beneficial in patients who are susceptible to hypoglycemia
  - Monotherapy does not usually cause hypoglycemia
- Minimum GFR required of >45mL/min
- Slows gastric emptying and is weight neutral
- Sitagliptin (Januvia) decreases A1c an average of 0.8%

1. Dungan. DPP-4 treatment DMT2. 2018
2. Whitley. Sitagliptin (Januvia) Treatment DMT2. 2007
ADVERSE EFFECTS

- The most common adverse effects occurring in up to 5% of patients are: Upper respiratory tract infection (URIs), UTIs, nasopharyngitis, and headache.
- There is an increased risk of hypoglycemia if used in combination with a sulfonylurea or insulin.

3. Pathak. DPP-4 MGMT Diabetes. 2010

