Diabetes Case Studies

Manouchehr Nakhjavani, MD
Tehran University of Medical Sciences

Case with qustions

- A 43 y/o man with type2 diabetes on 2000mg metformin .
- **Cr:1.3 , eGFR: 60cc/min, HbA1c: 8% BP: 125/70, alb/cr ratio:15mg/gr, BMI=30**
- **What will be your next approach?**

a) **Add gliclazide**

b) **Add empagliflozin**

c) **Add DPP4_Inhibitor**

d) **Add GLP-1 agonist**

- **If a patient does not have any limitations (financial, insurance, etc.) when it comes to diabetes medications, would you recommend a GLP-1 RA first or an SGLT21 for the CV and renal benefits?**

- **Is there a specific A1c level for which a GLP-1 RA should not be used following metformin?**

Case

- A38 y/o woman with typ2 diabetes treated with 500 mg metformin BD. Weight: 60, **HbA1c: 7%, Cr: 1.5, GFR:45, CAD history negative**
- **What will be your next approach?**

a) **Add gliclazide**
b) **Add empagliflozin**
c) **Add DPP4_Inhibitor**
d) **Continue metformin**

Case 1

ID/CC: 56 years old man with T2DM _ 6 years on *Metformin*.
A1c increasing to 7.8% over the past year.
Add'l Hx*:* Further attempts at lifestyle change unsuccessful.
PMH: HTN on enalpril, receives rosuvastatin.
Father had CAD
Highly compliant/adherent.
Declines injectables.

Case 1

PE: Obese, BMI= 36.5, BP= 142/84,
Acanthosis nigricans.
Data: A1c 7.8%, FPG 147,
Cr 1.1 (eGFR =60),
LDL 84, HDL 38, TG 256,
ECG: normal.
Your recommendation?

Case 1
Your recommendation?

Discuss Advantages' and disadvantages

1- Sulfonylurea
2- GLP-1 agonist
3- DPP-4 Inhibitor
4- SGLT2 Inhibitor

Case 2

ID/CC: 56 years old man with recent diagnosis of T2DM
_ Unable to tolerate *Metformin*.
A1c 8.5 and 9% on two occasions.
Add'l Hx*:* Further attempts at lifestyle change unsuccessful.
PMH: HTN on valsartan.
Highly compliant/adherent.
Declines injectables.

Case 2

PE: Obese, BMI= 31, BP= 135/85,

Data: A1c 9%, FPG 157,

Cr 1.1 (eGFR =60),

LDL 94, HDL 38, TG 240,

ECG: normal.

Your recommendation?

Case 2 Your recommendation?

Discuss Advantages' and disadvantages

1- SGLT2 inhibitors plus DPP-4 Inhibitors
2- SGLT2 Inhibitor plus sulfonylureas
3- SGLT2 Inhibitor plus GLP-1 agonist
4- SGLT2 Inhibitor alone

Case 3

ID/CC: 64 years old female with T2DM _ 14 years on Metformin/Sitagliptin. A1c now at 8.4%.

Add'l Hx: Recently hospitalized for ACS/stent. Diastolic dysfunction by echo.

Prior A1c's have been stable at 7 to 7.5%.

Cardiologist told her to seek your counsel about Improving metabolic control.

Case 3

PMH: CAD s/p MI; HTN, HLD, hypothyroid, breast ca.
On Atorvastatin, losartan, levothyroxine, tamoxifen, ASA.
Grade school teacher. Well insured.
Questionable adherence. Open to injections.

Case 3

PE: Obese, BMI 32.1, BP 118/76.

Data: A1c 8.4%, FPG 188.
Cr 1.4 (eGFR 44),
LDL 67, HDL54, TG 123,

ECG: old IWMI

Your recommendation?

Case 4

ID/CC: 77 years old man T2DM _ 21 years on Metformin, Linagliptin, Gliclazide.
A1c never well controlled (8–9% range). Recent A1c climb to 9.6% after hospitalization for PNA and stay at rehab facility.
Add'l Hx: PMH: COPD, CHF

Case 4

On simvastatin, furosemide, carvedilol, lisinopril, amlodipine,

Good adherence and visit attendance (family accompanies). Not opposed to injections.

Case 4

PE: BMI 29.6, BP 112/68,
Pulmonary rales.
Data: A1c 9.6%, FPG 223,
Cr 2.3, (eGFR 29), UAE 231mcg/mg Cr,
LDL 78, HDL 43, TG 117.
ECG: RBBB.
Your recommendation?

GLP-1-receptor agonists

Do you recommend GLP-1 RA?
What is the renal function considerations for liraglutide?

- **What is the relative efficacy of the oral GLP-1 RA vs the injectable GLP-1 Ras?**

Case 5

ID/CC: 72 years old woman with T2DM _ 16 years on glargine 78 U QHS. Over past year, glargine dose increased to combat progressive fasting hyperglycemia. Two hypo reactions, one at home and one at outside both occurring in the mid-afternoon.
Add'l Hx: SMBG log shows FBG 110–140 mg/dl, predinner 70–90 mg/dl.

Case 5

PMH: HTN, HLD, diastolic HF, osteoporosis,
RA, DJD (R TKR), visually impaired due to retinopathy.
Widow; lives alone. Home health aid.
Agreeable to up to 2 injections/day, but no more.
PE: Obese, BMI 36.5, BP 152/96, _ PDR.
Data: A1c 7.8%, FPG 147, LDL 84, HDL 38, TG 256,
ECG: Nonspecific ST-segment and T-wave changes

Case 5

Please comment on therapeutic plan.

Diabetes in Older Adults

Cases: Medication Selection to Minimize Hypoglycemia

She is 77-year-old female with a 20+ year history of T2DM. In general she has been well controlled with an A1c of 6.8-7.5%. She eats carefully, takes her medications and walks 5 times per week. She was started on oral agents initially but for the past 10 years she has been on basal insulin and premeal rapid acting insulin. She uses a correction scale before meals. Recently she has noted a decrease in her appetite.

Diabetes in Older Adults

Cases: Medication Selection to Minimize Hypoglycemia

She fell and fractured her right wrist and this has made management of her diabetes more difficult. She lives with her daughter and son-in-law, but they work, so she is alone most of the day. She has had episodes of mild hypoglycemia several times per week lately. There is no particular pattern as to timing of these episodes. Her eGFR has fallen from 60 to 30 over the past two years. Her is BMI=24.5 kg/m^2.

Diabetes in Older Adults

Cases: Medication Selection to Minimize Hypoglycemia

Question: Which approach would most safely and effectively reduce her risk of hypoglycemia?

A. Attempting to taper off prandial insulin onto a regimen of basal insulin plus a DPPIV-Inhibitor
B. B. Changing her rapid acting insulin to after-eating rather than before meals.
C. Attempting to taper off prandial insulin onto a regimen of basal insulin plus metformin
D. Adding a GLP-1 RA