

**Master Clinician:  
Management of Diabetes:  
Selecting Therapy for Optimal  
Outcomes & Beyond**

Moderator: Dr. Carol Wysham

Panelists: Dr. Om Ganda, Dr. Janet McGill, Dr. Ernesto  
Maddaloni

# Disclosures

- ▶ **Carol H. Wysham, MD**
  - **Research support:** Novo Nordisk, Eli Lilly

# Question to the audience:

How many patients with type 2 diabetes and co-existent cardiovascular disease do you see each month?

- A. <20
- B. 20 - 40
- C. 40 - 60
- D. >60

**Polling on next slide**

## **Question to the audience: Management of Cardiovascular Risk in Patient with Type 2 Diabetes**

**Which of the following medications have FDA approval for reduction in 3 point MACE (composite of nonfatal MI, nonfatal stroke and CVD death)**

- A. Empagliflozin
- B. Dapagliflozin
- C. Exenatide
- D. Semaglutide

**Polling on next slide**

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**Polling on next slide**

# Case 1

Patient new to your practice for management  
of T2DM

# Case 1

- ▶ 72 year old male with 8 year history of type 2 diabetes complicated by neuropathy. He also has long history of hyperlipidemia and hypertension.
- ▶ Medications: Metormin 1000 mg BID, Glipizide 10 mg QD, Atorvastatin 80 mg, Lisinopril 40 mg
- ▶ He admits to a decreased activity due to weakness and mild dyspnea for about two years, which he attributes to age. He denies chest pain

# Case 1 (continued)

## ▶ Examination

- BMI – 33 kg/m<sup>2</sup>
- BP – 138/84, P – 65
- Remarkable only for diminished sensation to 10 gm monofilament and weak dorsalis pedis pulses

## ▶ Laboratory

- A1c – 6.9% TC – 160 mg/dl, TG – 212 mg/dl, HDL – 33 mg/dl, LDL - 86 mg/dl
- eGFR – 55 ml/min/1.73 m<sup>2</sup>
- Urine albumin – 27 mg/gr Cr



# To the Panel:

- ▶ Before we proceed, do you want any additional information?

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  - EKG – Non-specific ST & T changes
  - ABI – 0.78 bilaterally
  - NT-proBNP – 1090 pg/ml (normal < 125 pg/ml)
  - ECHO – Left ventricular hypertrophy, with EF – 45%, consistent with HFmrEF. No focal wall defects
  - Nuclear stress test – reversible defect in distribution of LAD
  - Coronary CT scan – 70% stenosis left anterior descending, minimal plaques in RCA and circumflex

# Pertinent Comorbidities

- ▶ Congestive heart failure
- ▶ Mild nonalbuminuric diabetic kidney disease
- ▶ Atherosclerosis
- ▶ Peripheral neuropathy

# Question to Audience:

Which of the following would you add to his medical regimen?

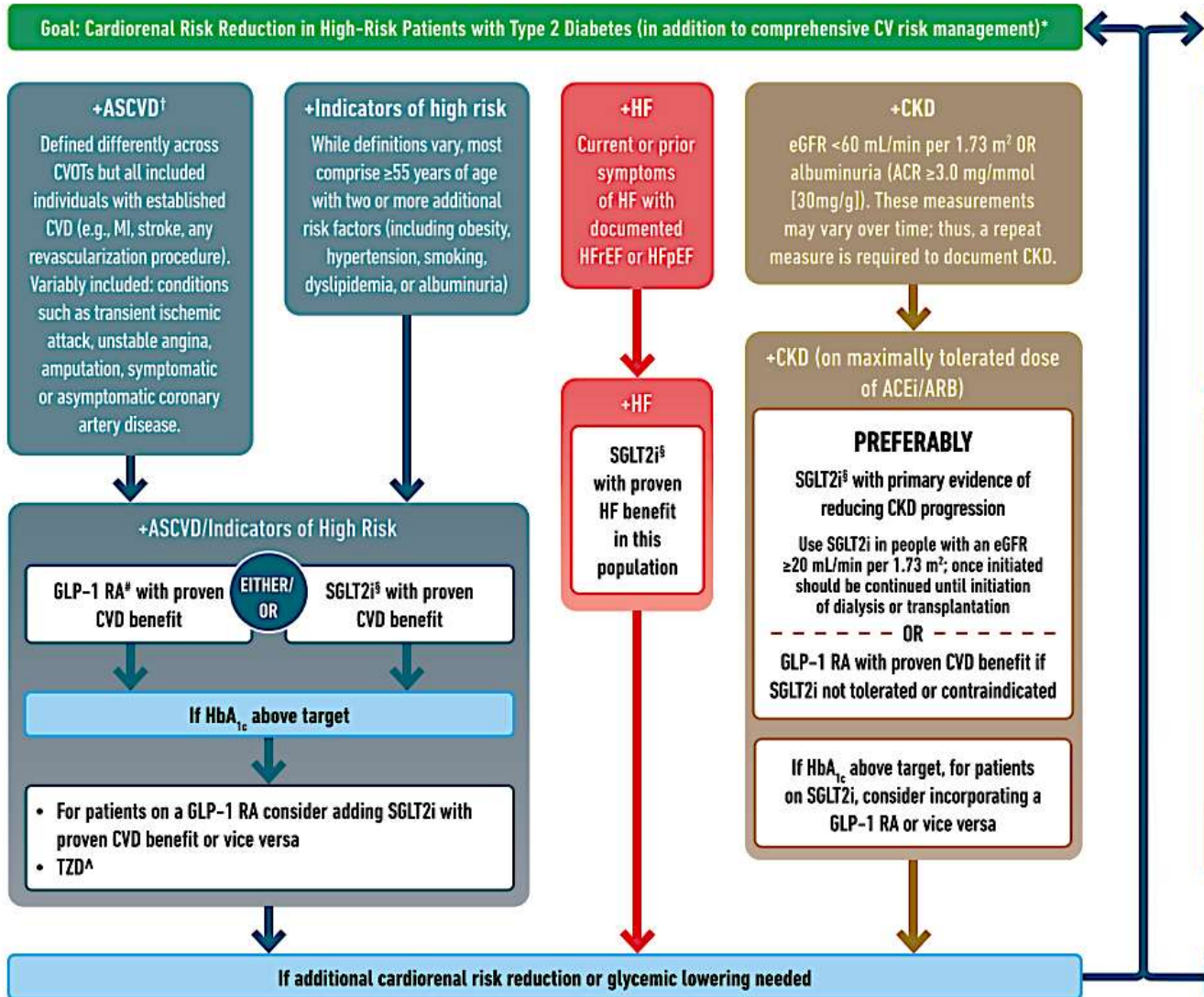
- A. Nothing, his A1c is at goal
- B. DPP-4 inhibitor
- C. GLP-1 RA
- D. SGLT-2i
- E. Tirzepatide

**Polling on next slide**

# USE OF GLUCOSE-LOWERING MEDICATIONS IN THE MANAGEMENT OF TYPE 2 DIABETES



HEALTHY LIFESTYLE BEHAVIORS; DIABETES SELF-MANAGEMENT EDUCATION AND SUPPORT (DSMES); SOCIAL DETERMINANTS OF HEALTH (SDOH)



# To the Panel:

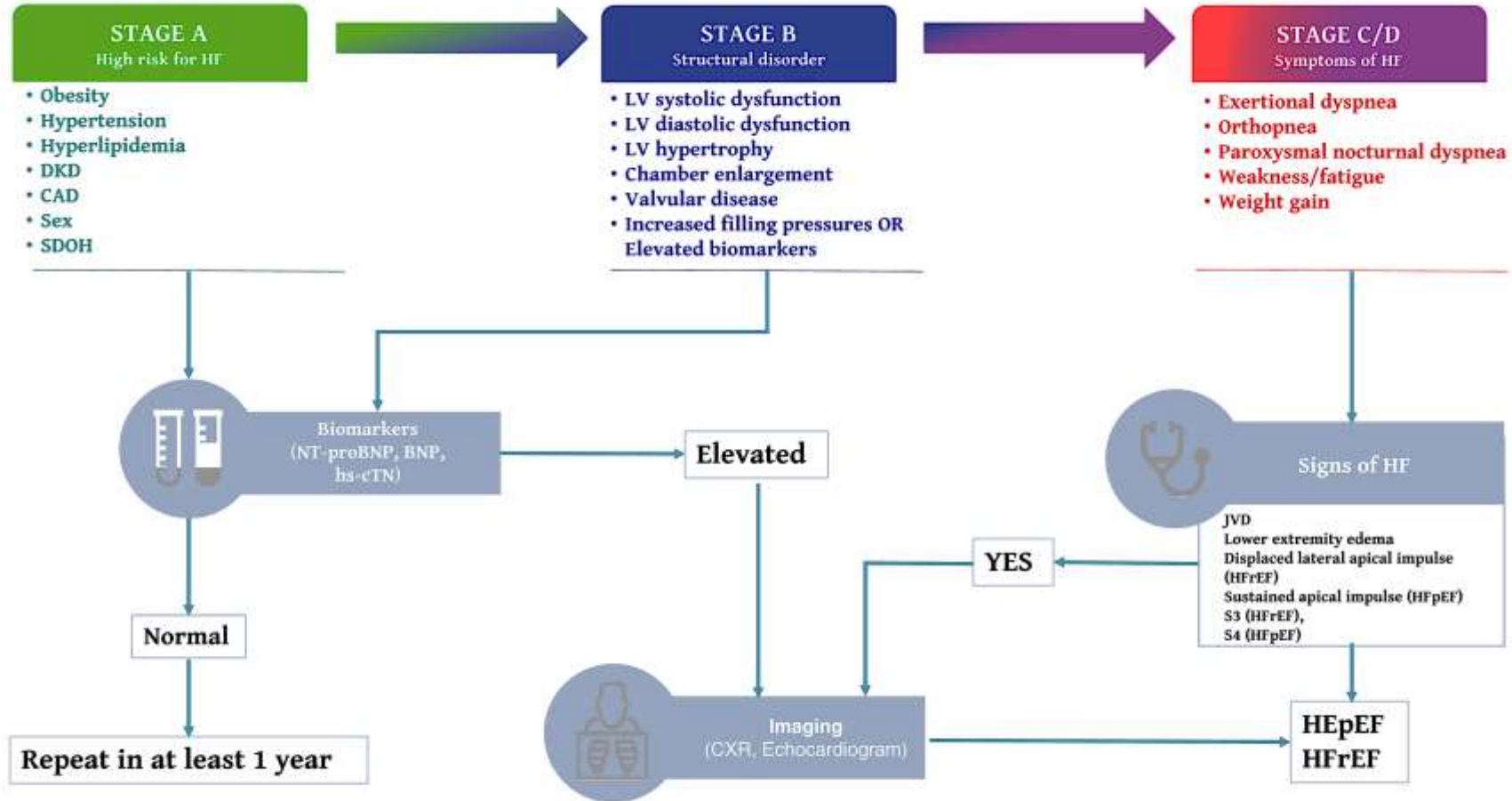
- ▶ Which of his comorbidities would you prioritize?
- ▶ Of the choices listed, which would be your preference for next step in this patient's management?


## Back to the question:

Which of the following would you suggest for improving this gentleman's glycemic control?

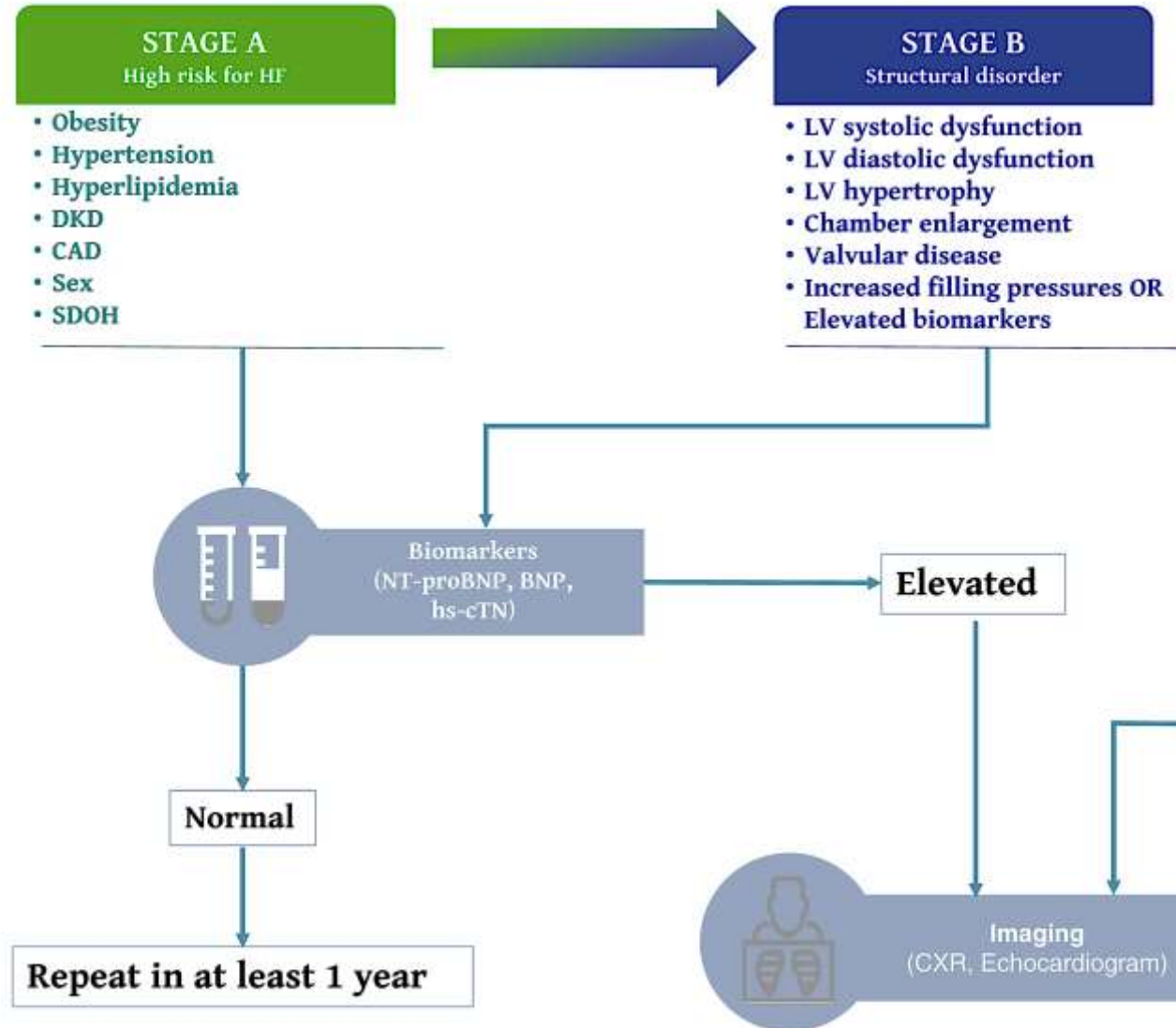
- A. DPP-4 inhibitor
- B. GLP-1RA
- C. SGLT-2 inhibitor
- D. Tirzepatide

Diabetes Care. 2022;45(7):1670-1690. doi:10.2337/dci22-0014



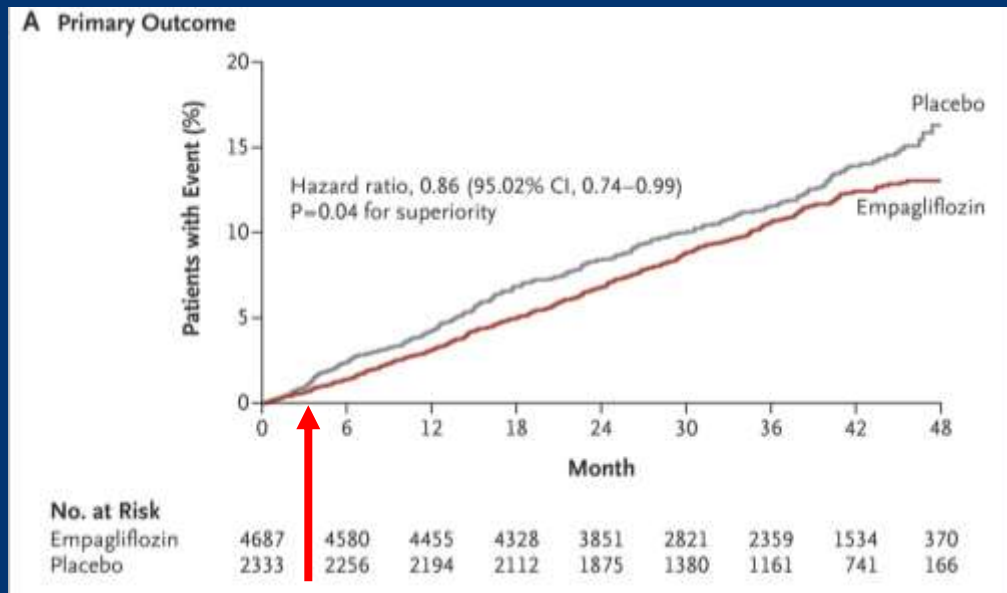


# From: Heart Failure: An Underappreciated Complication of Diabetes. A Consensus Report of the American Diabetes Association



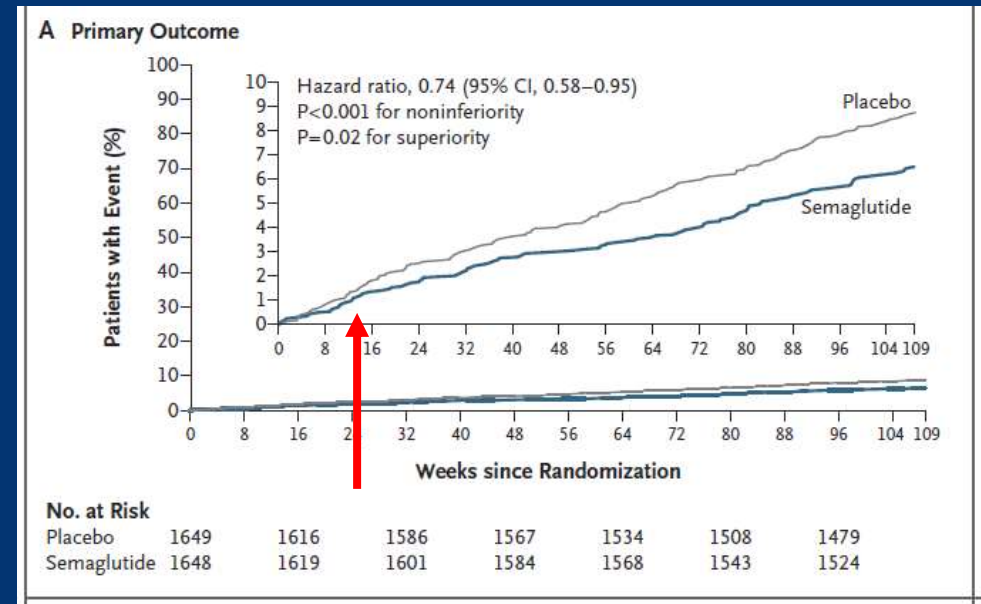
# Comparison of Reported Outcomes from EMPA-REG Compared to SUSTAIN-6 study

## EMPA-REG



Zinman, B, et al. N Engl J Med 2015; 373:2117-2128

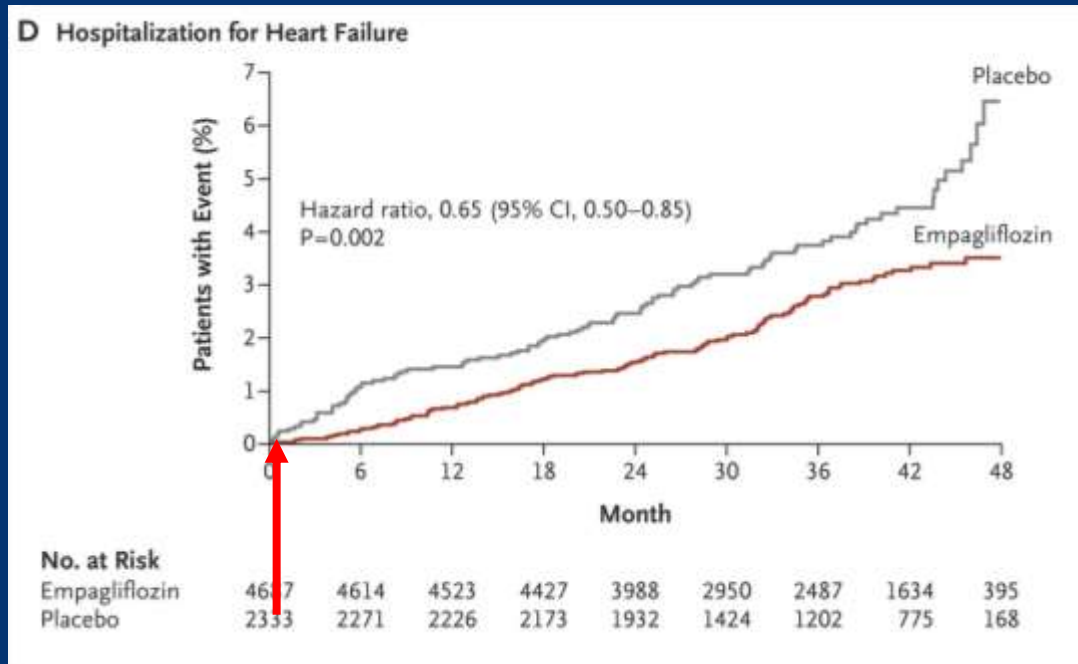
## SUSTAIN-6



Marso S, et al. N Engl J Med 2016;375:1834–44

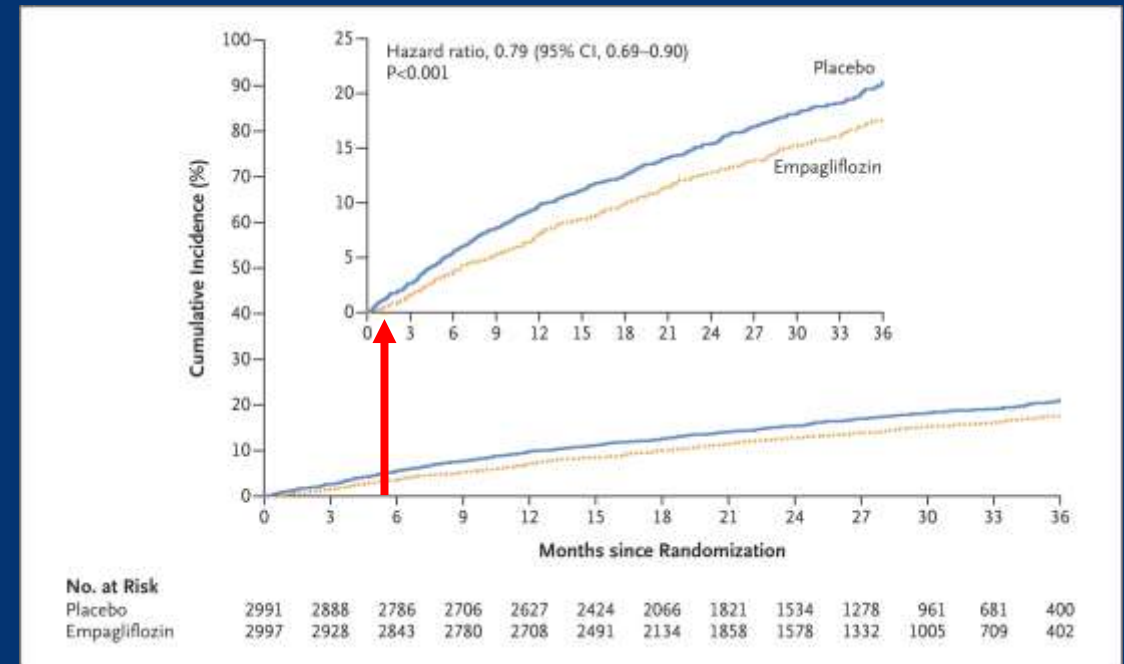
# Heart Failure Outcomes: EMPA-REG vs EMPEROR-Preserved

## EMPA-REG



Zinman B et al. N Engl J Med 2015;373:2117-2128

## EMPEROR-Preserved

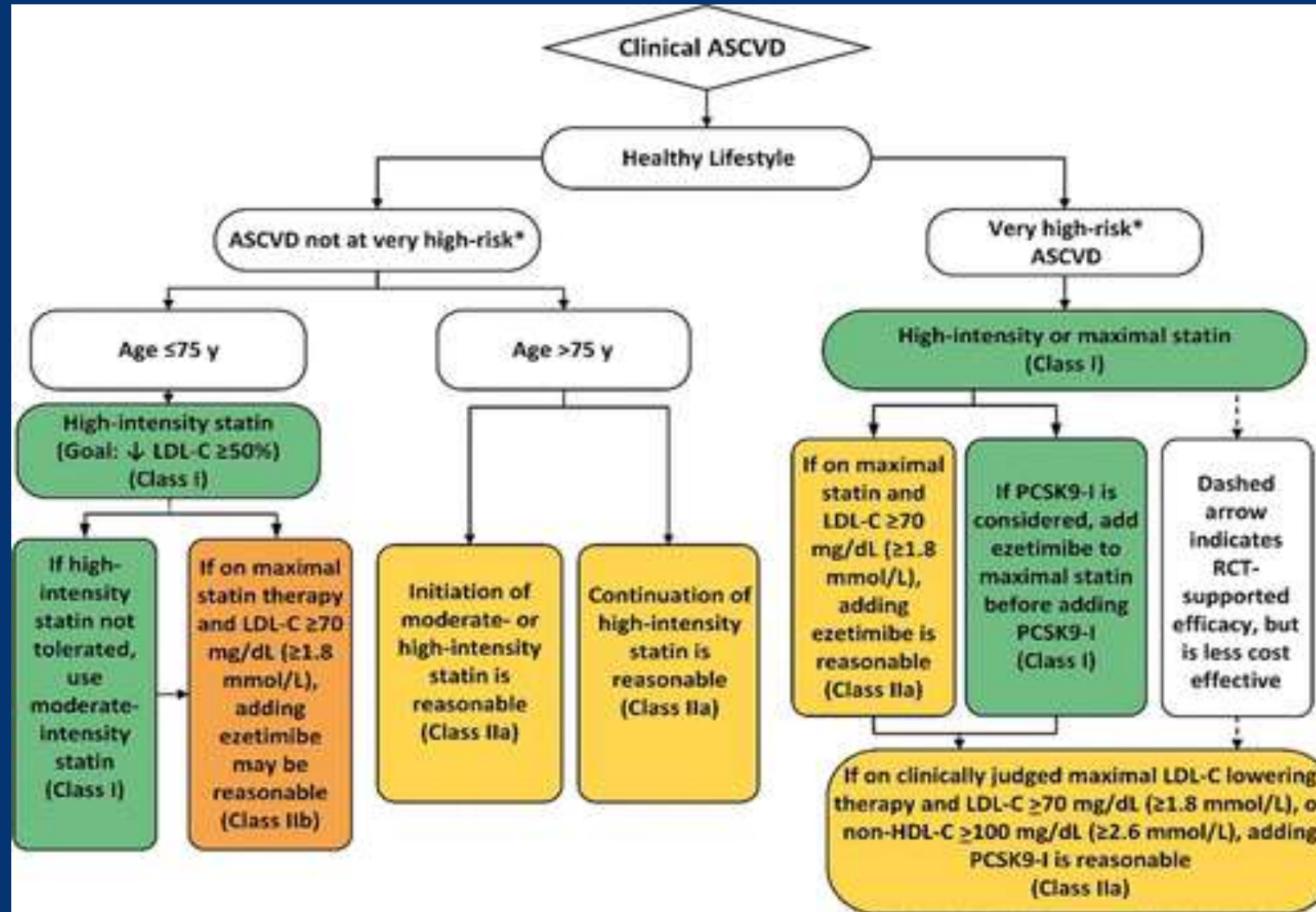


Anker SD et al. N Engl J Med 2021;385:1451-1461

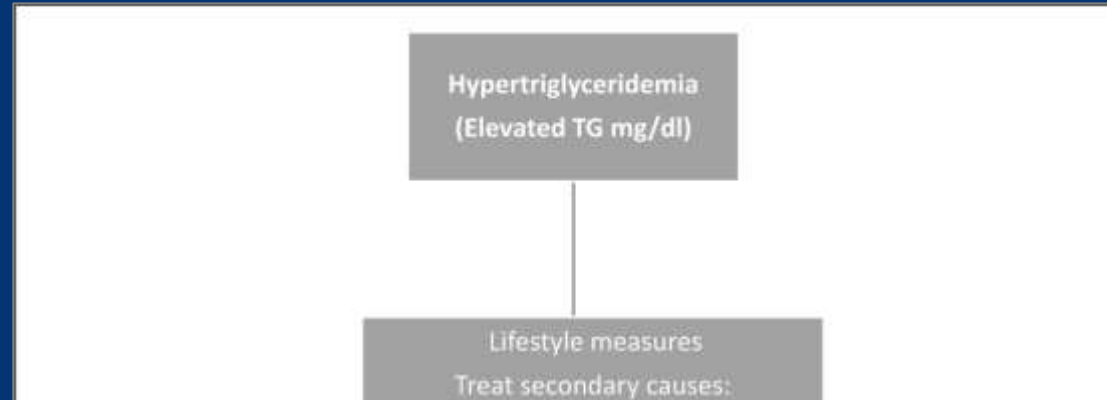
# To Our Panel

- ▶ Any comments on management of his lipids?
  - TC – 150 mg/dl, TG – 212 mg/dl, HDL-C – 33 mg/dl, LDL-C - 76 mg/dl
  - Non-HDL-C – 127 mg/dl

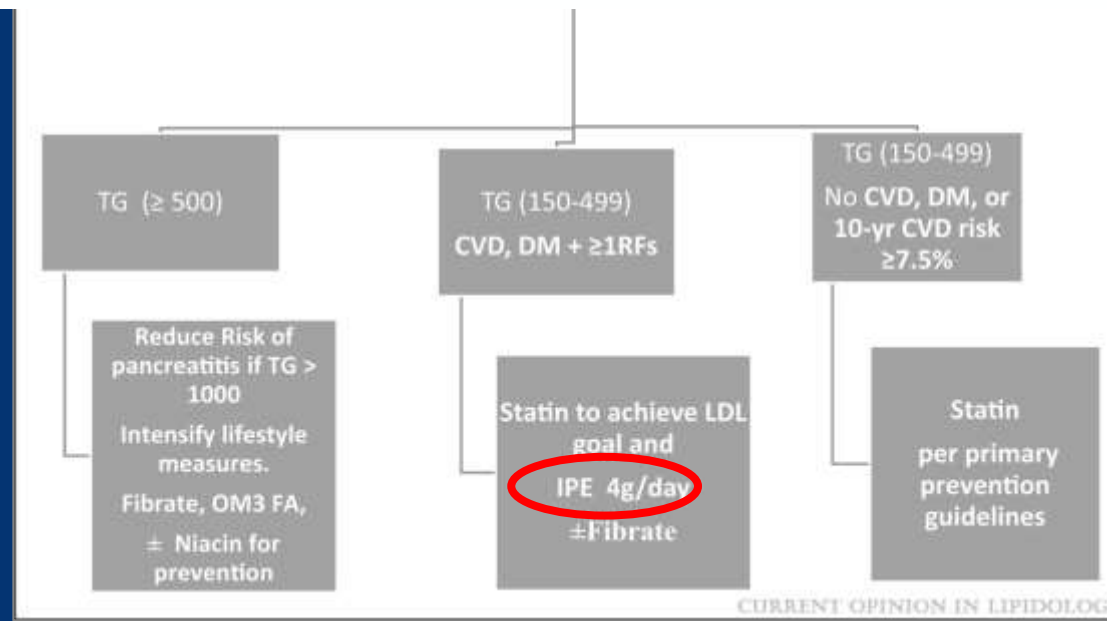
# AHA/ACC Guidelines for Secondary Prevention of ASCVD



# When to Lower Triglycerides



In patients with atherosclerotic cardiovascular disease or other cardiovascular risk factors on a statin with controlled LDL cholesterol but elevated triglycerides (135–499 mg/dL), the addition of icosapent ethyl can be considered to reduce cardiovascular risk. **A**



A simplified flow-chart to implement lifestyle measures and consider treatable secondary risk factors for high triglyceride before stratifying categories of high triglyceride for drug therapy options.

# To Our Panel

- ▶ Any comments on management of his blood pressure?
  - BP – 138/84

# AHA/ACC BP guidelines

## Table 7. American College of Cardiology/American Heart Association Office Blood Pressure Treatment Targets for Antihypertensive Drug Therapy for Management of Hypertension

A systolic blood pressure /diastolic blood pressure <130/80 mmHg target recommended for all adults with hypertension, with the exception that a systolic blood pressure <130 mmHg target is recommended for noninstitutionalized, ambulatory, community-living older adults (≥65 years). For older adults with hypertension and a high burden of comorbidity/limited life expectancy, it is reasonable to base treatment intensity and choice of drugs on clinical judgment, patient preference, and a team-based approach to assessing risk/benefit.

Whelton, P. Circulation. 2022,146: 868-877, DOI: (10.1161/CIRCULATIONAHA.121.054602)

# ADA BP guidelines

“it may be reasonable to target blood pressure <130/80 mmHg among patients with diabetes and either clinically diagnosed cardiovascular disease (particularly stroke, which was significantly reduced in ACCORD BP) or 10-year ASCVD risk ≥15%, if it can be attained safely.”

ADA Standards of Care 2022



# Case 2

Type 2 Diabetes with Chronic Kidney Disease

## Case 2

- ▶ 63 year old female with 12 year history of T2DM comes for management of type 2 diabetes
- ▶ History of hypertension, hyperlipidemia, known CKD
- ▶ Current medications: Glargine insulin 30 units in AM, Aspart insulin 20 units with each meal, Glipizide 10 mg QD, Atorvastatin 20 mg, Irbesartan 300 mg QD, Chlorthalidone 15 mg QD, Aspirin 81 mg QD.

## Case 2 (continued)

### ► Physical Examination

- BMI – 31.20 kg/m<sup>2</sup>
- BP 134/94
- No retinopathy
- Normal pedal pulses

### ► Laboratory testing

- A1c – 7.5%
- TC – 131 mg/dl, TG - 170 mg/dl, HDL-C – 32 mg/dl, LDL-C – 65 mg/dl, non-HDL-C - 139
- eGFR – 35 ml/min/1.73 m<sup>2</sup>
- Urine albumin - 328 mg/g Cr

# Question to Audience:

What do you suggest for management of hyperglycemia in this patient?

- A. Add metformin
- B. Add DPP-4 inhibitor
- C. Add SGLT-2 inhibitor
- D. Add GLP-1 RA

**Polling on next slide**

# Question to Audience:

What do you suggest for management of diabetes in this patient?

- A. Titrate metformin to 1000 mg BID
- B. Add glipizide
- C. Recommend very low calorie diet (DIRECT study)
- D. Add SGLT-2 inhibitor
- E. Add GLP-1 RA

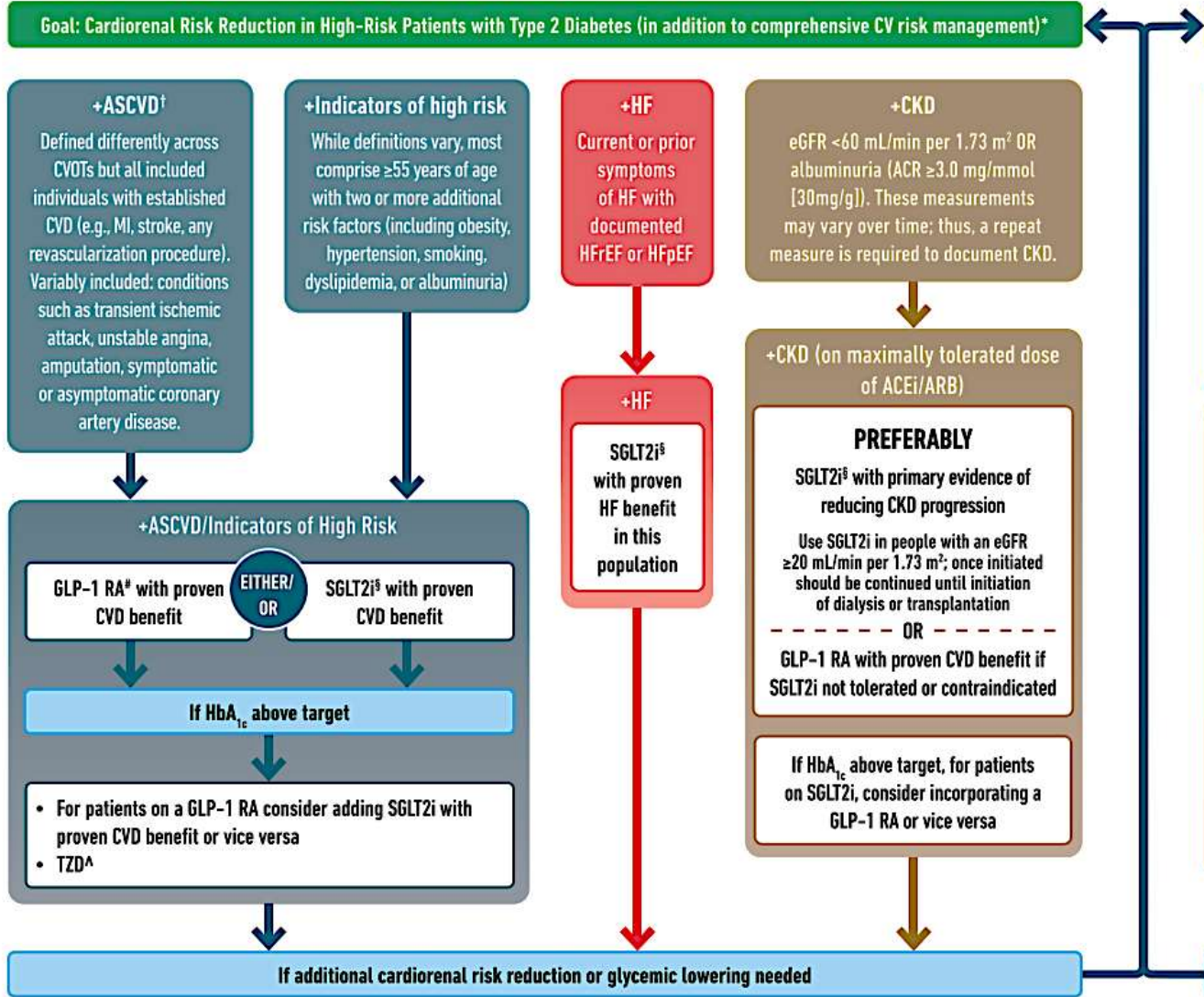
# To our panel

- ▶ Do you agree with my recommendation for SGLT-2?
- ▶ How would you adjust the background medications?
- ▶ Would your recommendation change if eGFR was < 20?
- ▶ Would a GLP-1 RA make sense here?

# USE OF GLUCOSE-LOWERING MEDICATIONS IN THE MANAGEMENT OF TYPE 2 DIABETES



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# Case 3

Type 2 Diabetes with Coronary Artery Disease  
and History of Gestational Diabetes



## Case 3:

- ▶ 60 year old Indian female presents to you for new onset type 2 diabetes diagnosed during hospitalization for acute coronary syndrome (LAD stenting was performed).
- ▶ History of PCOS, gestational diabetes and recent diagnosis of prediabetes & hypertension.
- ▶ Current medications (all started in the hospital): Metformin 500 mg BID, Lisinopril 20 mg, ASA 81 mg, Metoprolol 50 mg BID, Atorvastatin 80 mg

## Case 3 (continued)

### ▶ Physical Examination

- BMI – 30.2 kg/m<sup>2</sup>
- BP – 146/88, P – 68

### ▶ Laboratory (from hospital)

- Random glucose - 243 mg/dl, A1c – 8.2%
- Total cholesterol – 239 mg/dl,  
Triglycerides - 260 mg/dl, HDL-C – 32 mg/dl,  
LDL – 155 mg/dl eGFR – 75 ml/min/1.73 m<sup>2</sup>
- Urine albumin - 28 mg/g Cr

# Question to Audience:

What do you suggest for management of diabetes in this patient?

- A. Nothing, wait for three months to see effect of metformin
- B. Increase metformin to 1000 mg BID
- C. Recommend very low calorie diet (DIRECT study)
- D. Add SGLT-2 inhibitor
- E. Add GLP-1 RA

**Polling on next slide**

# Question to Audience:

What do you suggest for management of diabetes in this patient?

- A. Nothing, wait for three months to see effect of metformin
- B. Increase metformin to 1000 mg BID
- C. Recommend very low calorie diet (DIRECT study)
- D. Add SGLT-2 inhibitor
- E. Add GLP-1 RA

## To our panel

- ▶ What is your opinion of the optimal option for glycemic control for this patient?
- ▶ Would this recommendation change if A1c < 7.0%?
- ▶ Would you suggest a very low calorie diet for attempt at diabetes remission (DIRECT study)?

## To our panel – these questions relate to seeing her at the stage of prediabetes

- ▶ There were several historical clues pointing to her increased risk for diabetes. In retrospect, how and when would you have treated this lady for prevention of diabetes?
  - PCOS?
  - After diagnosis of GDM?
  - Upon diagnosis of prediabetes
- ▶ Upon diagnosis of prediabetes, what would you set as goals for lipids, BP?

# Case 4

Type 2 Diabetes with Elevated Liver Function  
Tests

## Case 4

- ▶ 56 year old male with 3 year history of Type 2 diabetes, hypertension and hyperlipidemia presents for first visit for diabetes management. He denies presence or symptoms of complications.
- ▶ Current medications: metformin 500 mg BID, Losartan 100 mg QD, Rosuvastatin 20 mg QD
- ▶ He denies alcohol use
- ▶ He denies FH of diabetes and liver disease



## Case 4 (continued)

### ► Physical Examination

- BMI – 33.5 kg/m<sup>2</sup>
- BP – 126/78, P – 68
- Except for central obesity, exam was normal

### ► Laboratory

- A1c – 8.2%
- Total cholesterol – 159 mg/dl,  
Triglycerides - 260 mg/dl, HDL-C – 32 mg/dl,  
LDL – 75 mg/dl eGFR – 68 ml/min/1.73 m<sup>2</sup>
- Urine albumin - 32 mg/g Cr,
- ALT – 66 U/L, AST – 72 U/L

# To The Panel

- ▶ What do you suggest for work up of the elevated liver function tests?
  - CBC normal with platelet count of 258
  - Hepatitis A , B and C screening negative
  - FIB-4 Index was 2.0 (intermediate risk)
  
- ▶ Assuming he has fatty liver, what recommendations would you make for
  - Diet?
  - Medications?

**Thank you to our  
audience!**