

# Diagnosis and Treatment of Chronic Kidney Disease Associated with Type 2 Diabetes

2024 Rural Health Workshop

June 12, 2024

# Disclosures

- Bayer Pharmaceuticals
- Kidney and Hypertension Associates
- NKF of Louisiana

# Objectives

- Emphasize importance of both UACR & eGFR testing
- Provide an overview of the CKD Heatmap
- Discuss Cardiovascular Risks associated with decreased eGFR & increased albuminuria
- Treatment Guidelines
- Introducing a Pillared Approach the Treatment of CKD associated with T2D

# Definition of Chronic Kidney Disease

## Chronic Kidney Disease (CKD)<sup>1,2</sup>

FOR  $\geq 3$  MONTHS:

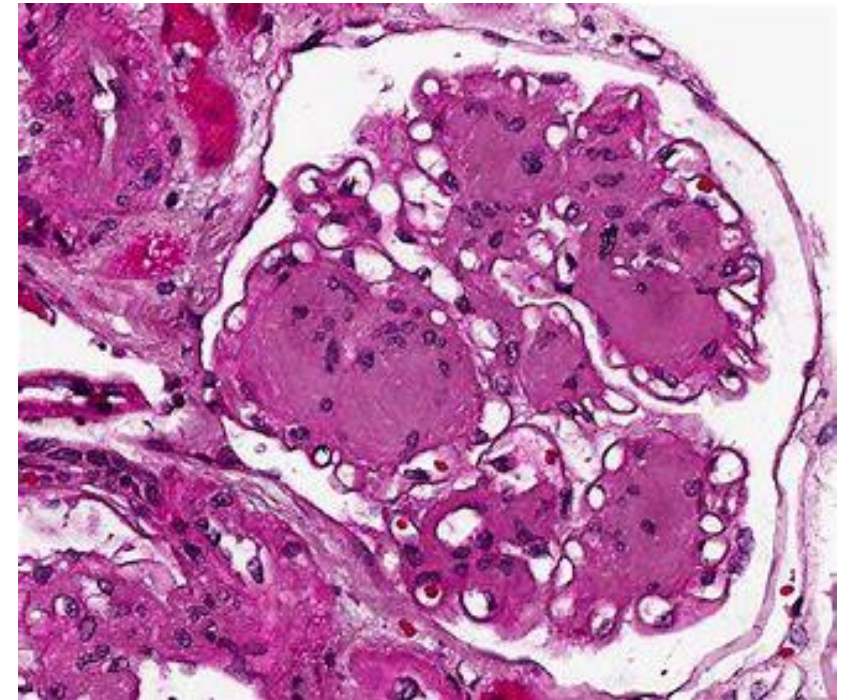
Persistent **eGFR**  $< 60$  mL/min/1.73 m<sup>2</sup>

OR

Persistent **albuminuria** (**UACR**  $\geq 30$  mg/g)

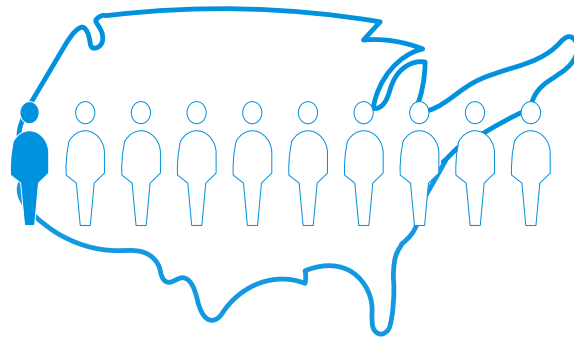
OR

**Both**



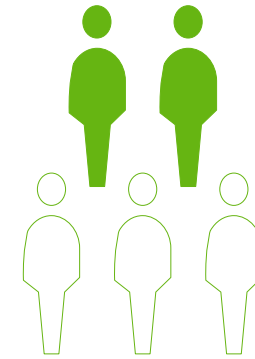
# Chronic Kidney Disease is a Prevalent Complication of T2D

**T2D** is a leading cause of CKD in the US<sup>1</sup>



In 2019, **35.4M** Americans (~10.7%) had T2D<sup>2</sup>

**~40%** of patients in the US



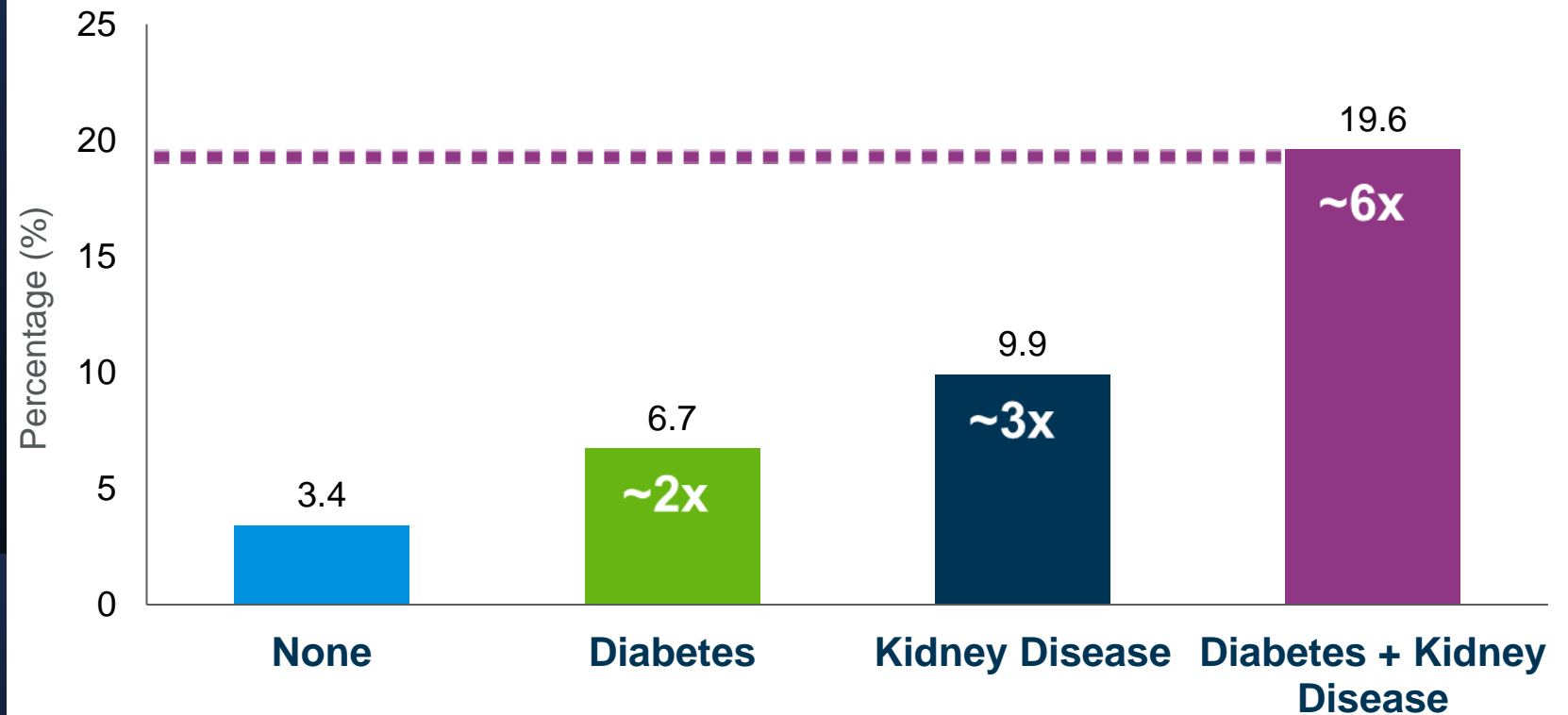
with **T2D** develop CKD<sup>1</sup>

Patients with CKD associated with **T2D** are at *increased risk* for *CV-related death* compared to patients with T2D alone<sup>3</sup>

1. Bailey RA, et al. *BMC Res Notes*. 2014;7:415.
2. American Diabetes Association. Statistics about diabetes. 2022. <https://diabetes.org/about-us/statistics/about-diabetes>. Accessed March 1, 2023
3. Afkarian M, et al. *J Am Soc Nephrol*. 2013;24(2):302-308.

CKD  
Approximately  
Triples the Risk  
of CV Mortality  
in Patients with  
T2D

## 10-Year Standardized CV Mortality<sup>a</sup>



Data from the NHANES III<sup>b</sup> study suggested that excess risk for CV mortality among patients with T2D was concentrated in patients with CKD (defined as albuminuria, impaired eGFR, or both)

# CKD increases CV risk in patients with T2D<sup>1</sup>

Patients with CKD associated with T2D:

~3x

Have **~3X greater risk of dying from CV causes** than patients with T2D alone<sup>1</sup>

5x

Face a **5X greater risk of HHF** than patients with T2D alone<sup>2</sup>

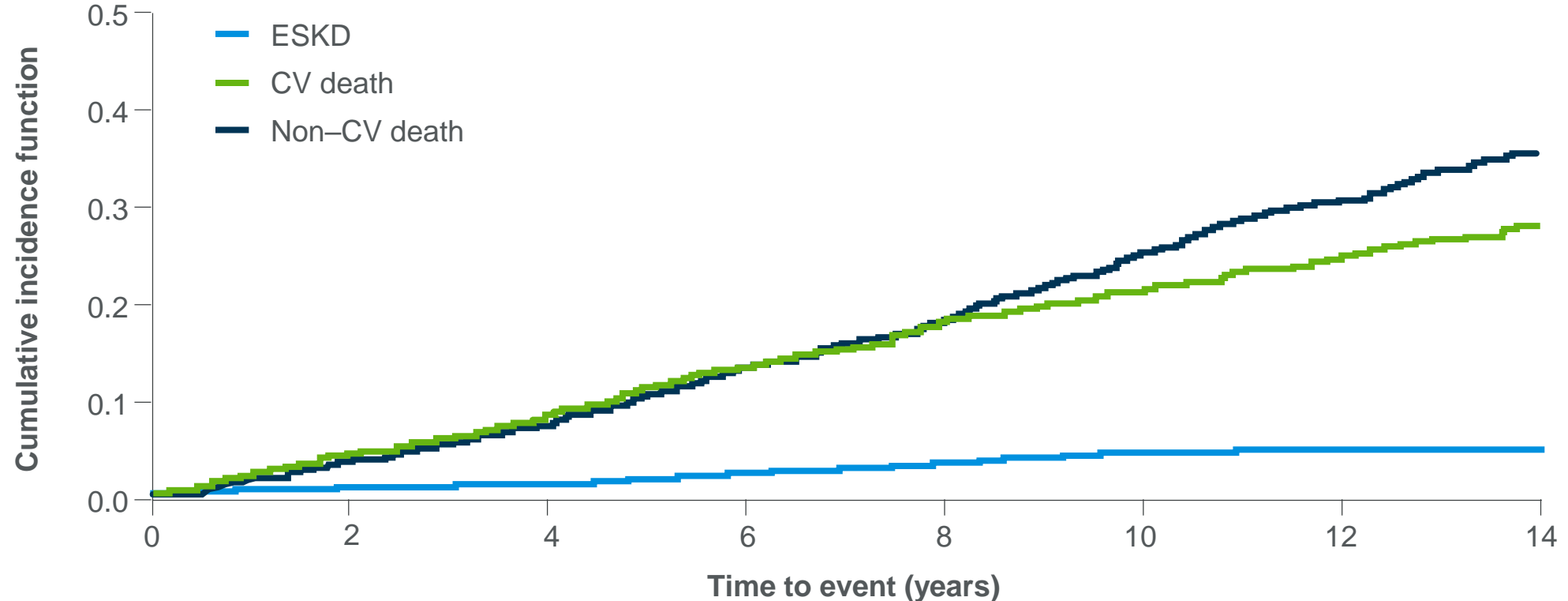
~2x

Report **~2X more MI cases** than patients with T2D alone<sup>3</sup>

1. Afkarian M, et al. *J Am Soc Nephrol*. 2013;24(2):302-308. 2. Scirica BM, et al. *JAMA Cardiol*. 2018;3(2):155-163. 3. Wu B, et al. *BMJ Open Diabetes Res Care*. 2016;4(1):e000154. doi:10.1136/bmjdr-2015-000154.

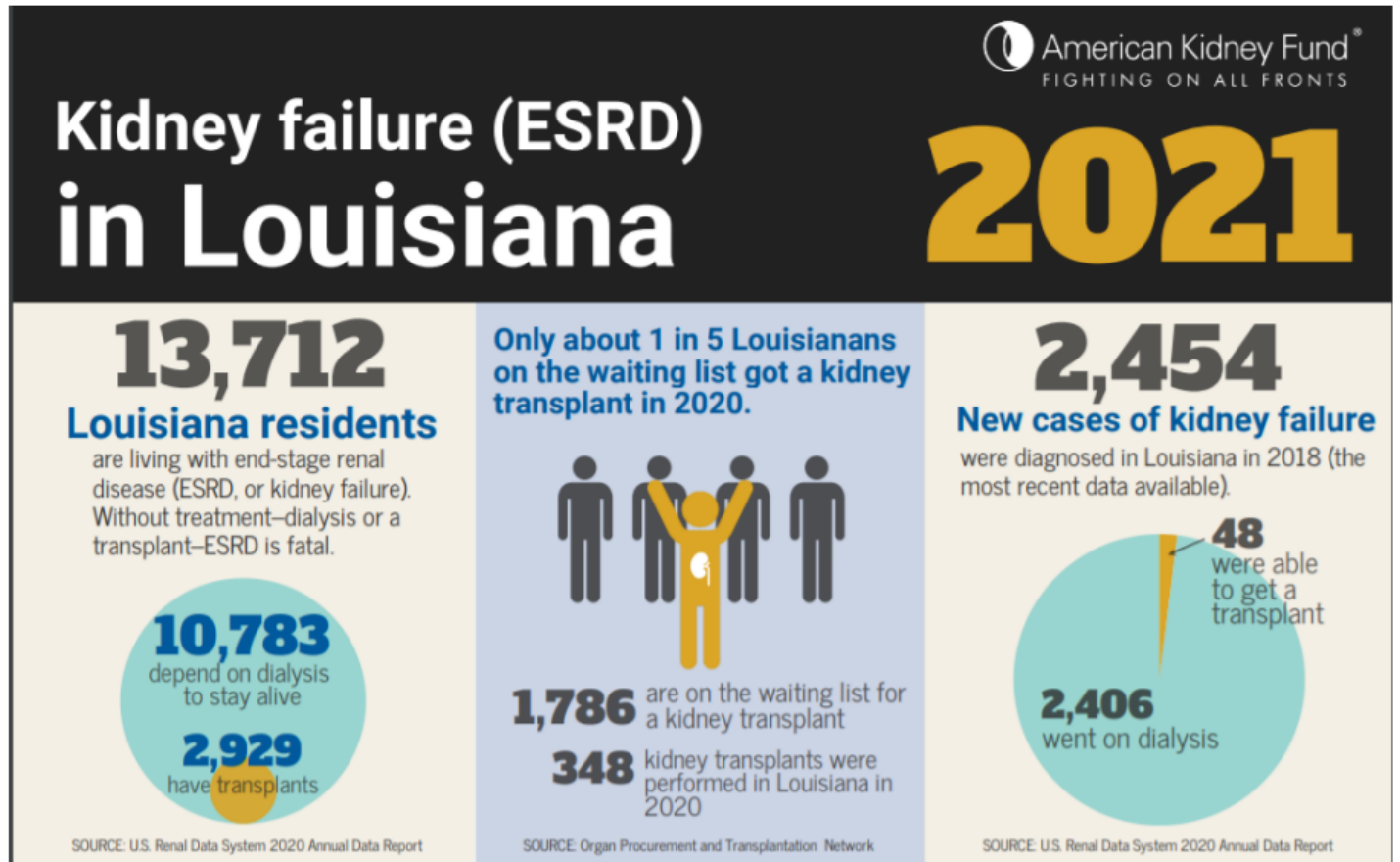
# Older Patients With CKD, Regardless of T2D, Are Six Times More Likely to Die From CV-Related Causes Than to Progress to ESRD

## Cumulative Incidence of ESKD, CV Death, and Non-CV Death<sup>a</sup>



<sup>a</sup>Cardiovascular Health Study of 1268 community-dwelling adults  $\geq 65$  years old with eGFR  $< 60$  mL/min/1.73 m<sup>2</sup>; the cohort ran through 2003.

# Kidney Failure in Louisiana



### Footnotes

CDC - National Center for Health Statistics's WONDER Database.

[https://www.cdc.gov/nchs/pressroom/sosmap/kidney\\_disease\\_mortality/kidney\\_disease.htm](https://www.cdc.gov/nchs/pressroom/sosmap/kidney_disease_mortality/kidney_disease.htm)

2020 Behavioral Risk Factor Surveillance System

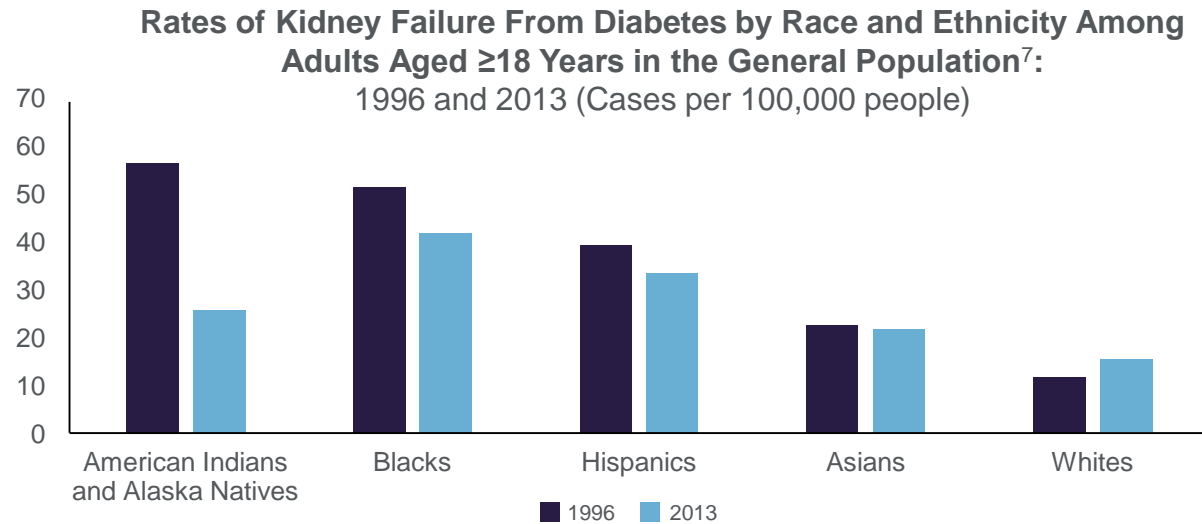
United States Renal Data System. 2020 *USRDS Annual Data Report: Epidemiology of kidney disease in the United States*. National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD, 2020.

<https://adr.usrds.org/2020/chronic-kidney-disease>

Organ Procurement and Transplantation Network. <https://optn.transplant.hrsa.gov/data/view-data-reports/state-data/>

# CKD and ESRD disproportionately impact African American, Native American, and Hispanic patients

The progression of CKD does not affect all patients at the same rate<sup>6\*</sup>

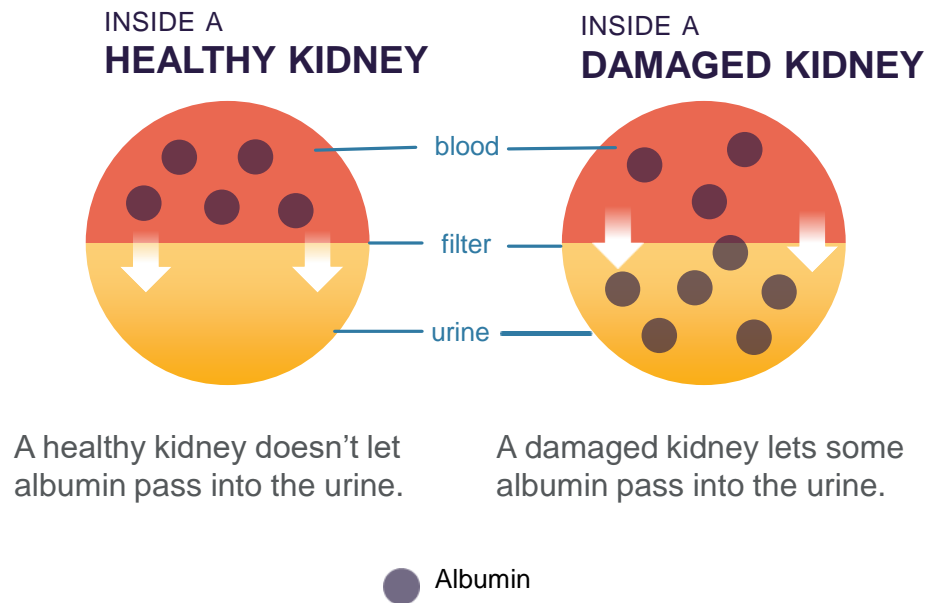


- The **major causes of CKD** (eg, diabetes and hypertension) **occur more frequently in non-white patients**<sup>1-3</sup>
- According to the Centers for Disease Control and Prevention, **CKD is more common in non-Hispanic Blacks (16.3%) and Hispanics (13.6%)** than in non-Hispanic Whites (12.7%) or non-Hispanic Asians (12.9%)<sup>1</sup>
- Despite these health disparities, **in 2015, fewer African American patients with diabetes received annual UACR assessment** when compared with White patients with diabetes (46.0% vs 47.5%)<sup>4\*</sup>
- In a cross-sectional study of >1 million adults in the United States with ESKD, investigators concluded that **from 2005 to 2015, racial and ethnic disparities in predialysis nephrology care did not substantially improve**<sup>5</sup>

1. Centers for Disease Control and Prevention. Accessed October 17, 2023. <https://www.cdc.gov/kidneydisease/pdf/Chronic-Kidney-Disease-in-the-US-2021-h.pdf> 2. American Diabetes Association. Accessed October 17, 2023. <https://diabetes.org/about-diabetes/statistics/about-diabetes> 3. Centers for Disease Control and Prevention. Accessed October 17, 2023. <https://www.cdc.gov/bloodpressure/facts.htm> 4. United States Renal Data System. Accessed October 17, 2023. [https://www.usrds.org/media/1651/v3\\_c01\\_hp2020\\_17.pdf](https://www.usrds.org/media/1651/v3_c01_hp2020_17.pdf) 5. Purnell TS et al. *JAMA Netw Open*. 2020;3(8):e2015003. 6. Bullock A et al. *MMWR Morb Mortal Wkly Rep*. 2017;66(1):26-32. 7. Centers for Medicare & Medicaid Services. Accessed October 17, 2023. <https://www.cms.gov/files/document/chronic-kidney-disease-disparities-educational-guide-primary-care.pdf> 8. American Diabetes Association. *Diabetes Care*. 2023;46(suppl 1):S1-S291.

# Albuminuria is a key mediator of kidney damage and an early marker of CV risk and CKD progression

## Albuminuria Occurs in the Context of Aberrant Structural and Functional Relationships<sup>5</sup>



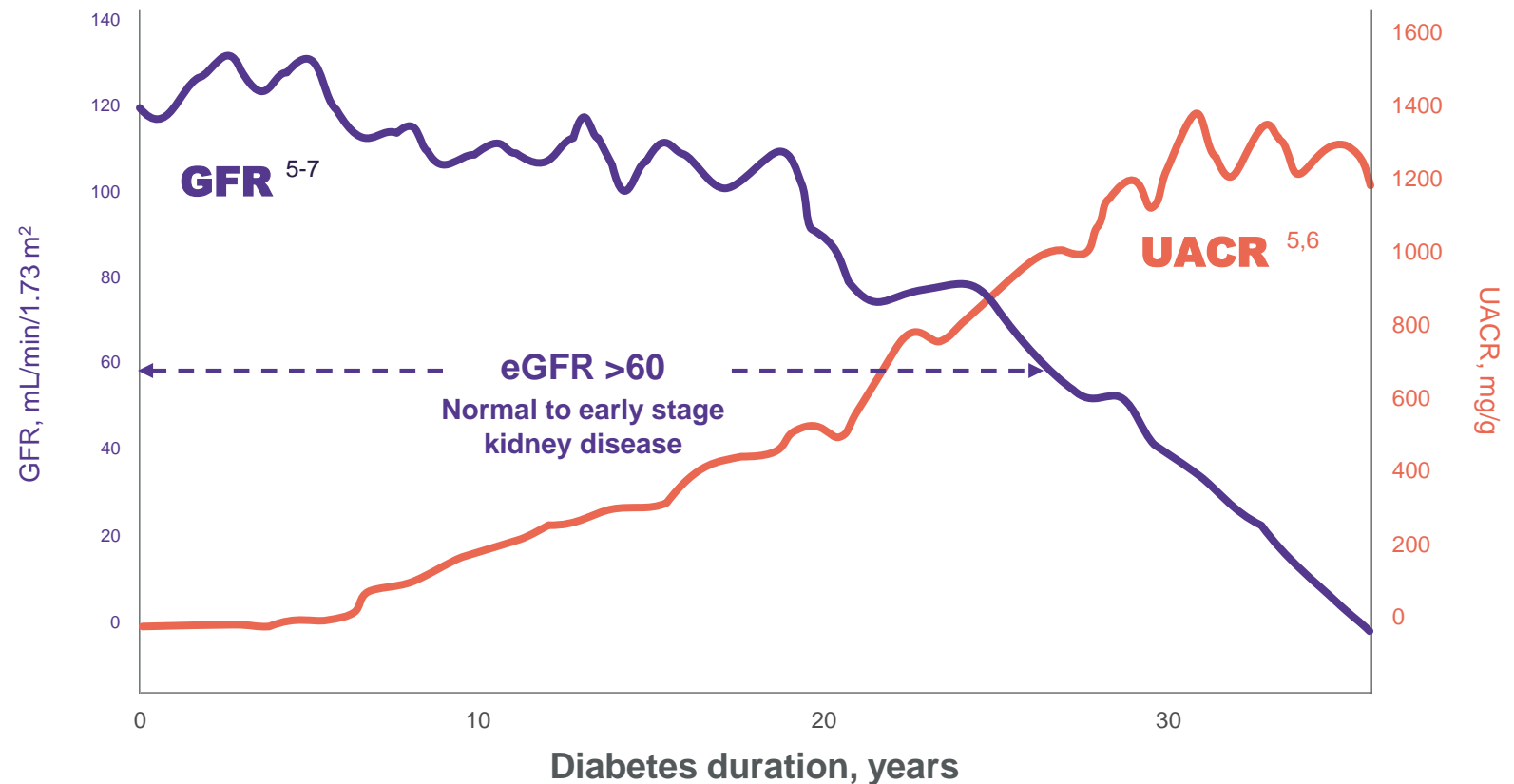
Albuminuria categories <sup>6</sup>	UACR, mg/g
<b>A1</b> Normal to mildly increased	<30
<b>A2</b> Moderately increased	30-299
<b>A3</b> Severely increased	≥300

- **Detectable increases in UACR reflect kidney injury at an early stage** and generally occur before a decline in eGFR<sup>7</sup>
- **Nephron loss may be irreversible** and occurs proportionally as eGFR declines<sup>8</sup>
- **UACR ≥30 mg/g** is an important risk factor for CV events in patients with T2D<sup>9</sup>
- Reducing UACR may support the **slowing of CKD progression**<sup>7</sup>

Conceptual Model of Changes in GFR and Albuminuria Over Time in Patients With CKD Associated With Diabetes<sup>1,2</sup>

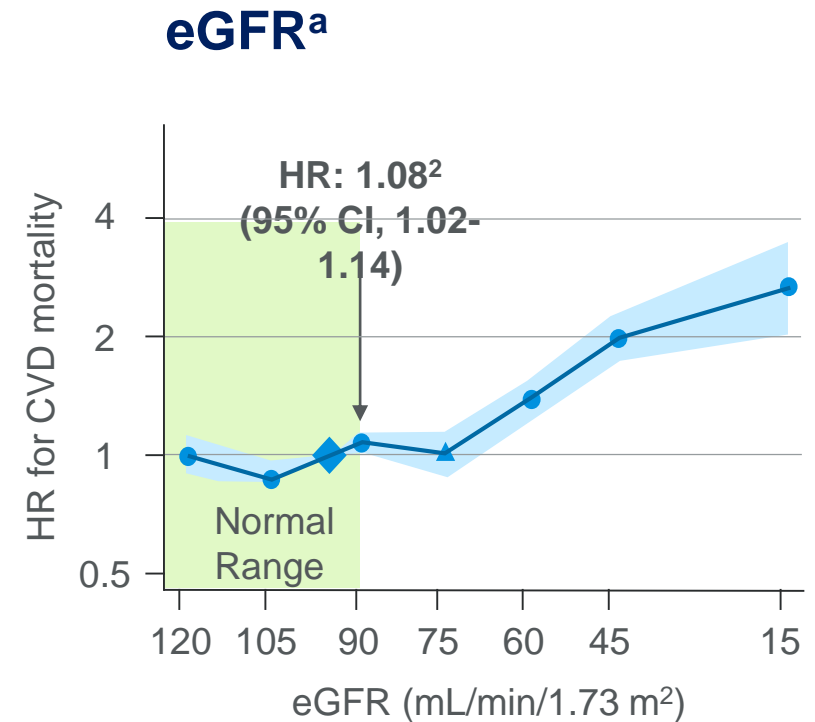
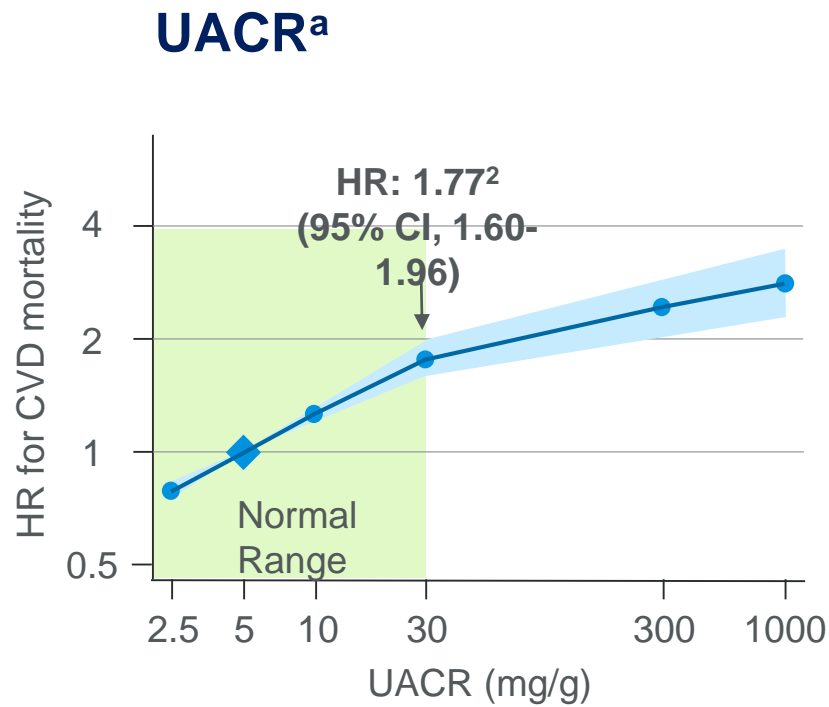
Albuminuria, measured through UACR, is an independent predictor of poor CV outcomes<sup>1-4</sup>

Based on Conceptual Model \*: 5-7



References: 1. Scirica BM et al. *JAMA Cardiol.* 2018;3(2):155-163. 2. Matsushita K et al. *Lancet Diabetes Endocrinol.* 2015;3(7):514-525. 3. Chronic Kidney Disease Prognosis Consortium. *Lancet.* 2010;375(9731):2073-2081. 4. Betts KA et al. *Am J Manag Care.* 2022;28(suppl 6):S112-S119. 5. Afkarian M. *Pediatr Nephrol.* 2015;30(1):65-74. 6. Alicic RZ et al. *Clin J Am Soc Nephrol.* 2017;12(12):2032-2045. 7. Altemtam N et al. *Nephrol Dial Transplant.* 2012;27(5):1847-1854.

# UACR Is an Independent Predictor of CV Mortality From eGFR<sup>1</sup>



Independent of each other and traditional risk factors, UACR  $\geq 10$  mg/g and eGFR  $< 60$  mL/min/1.73 m<sup>2</sup> were significantly associated with increased CV mortality

# eGFR and Albuminuria Can Be Used to Guide Monitoring and Treatment of CKD Progression

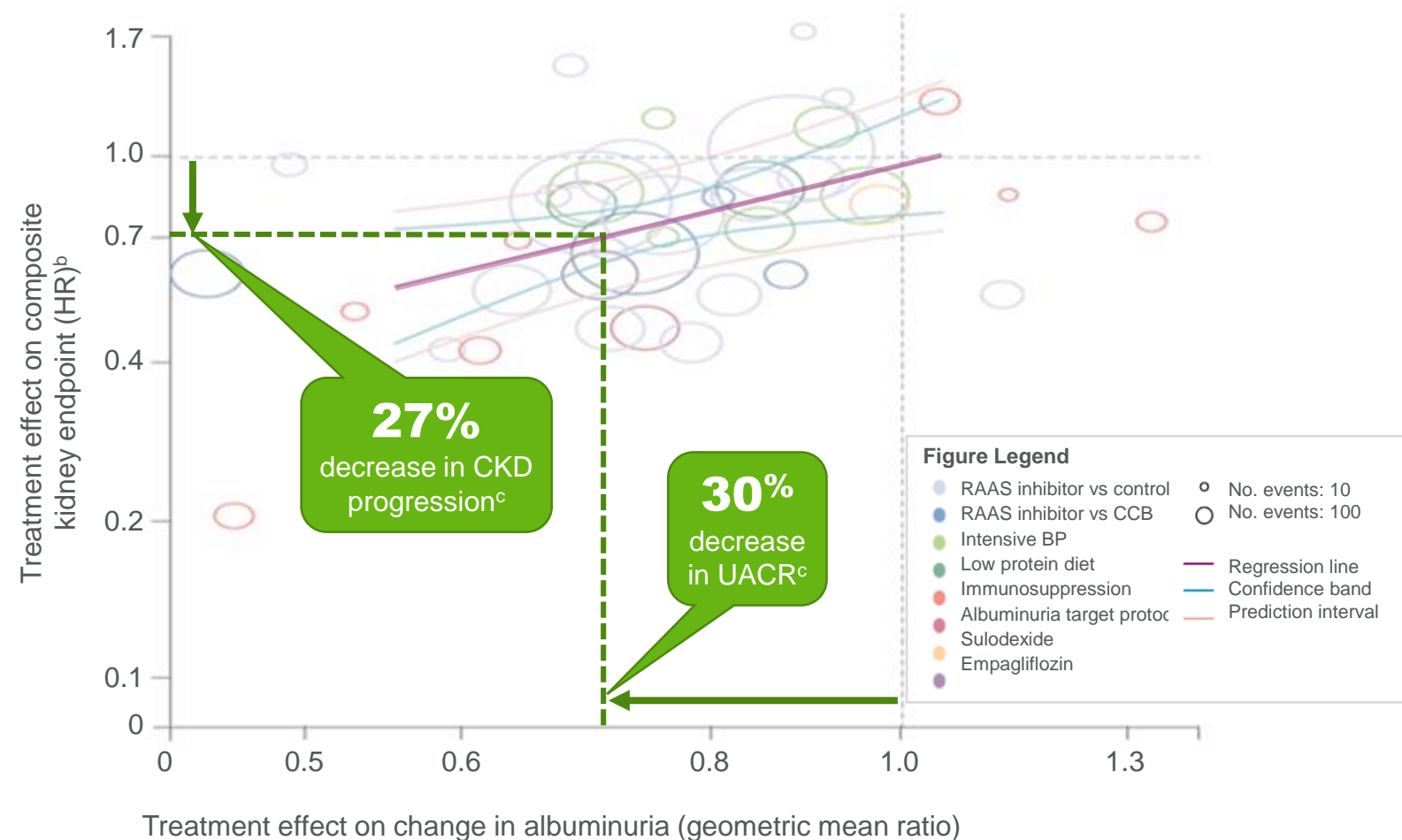
*Risk of Progression, Frequency of Visits, and Referral to Nephrology According to eGFR and Albuminuria<sup>a</sup>*

				Albuminuria categories		
				Description and range		
				A1	A2	A3
				Normal to mildly increased	Moderately increased	Severely increased
				<30 mg/g <3 mg/mmol	30-299 mg/g 3-29 mg/mmol	≥300 mg/g ≥30 mg/mmol
GFR categories, mL/min/1.73 m <sup>2</sup> Description and range	G1	Normal or high	≥90	Screen 1	Treat 1	Treat & Refer 3
	G2	Mildly decreased	60-89	Screen 1	Treat 1	Treat & Refer 3
	G3a	Mildly to moderately decreased	45-59	Treat 1	Treat 2	Treat & Refer 3
	G3b	Moderately to severely decreased	30-44	Treat 2	Treat & Refer 3	Treat & Refer 3
	G4	Severely decreased	15-29	Treat & Refer 3	Treat & Refer 3	Treat & Refer 4+
	G5	Kidney failure	<15	Treat & Refer 4+	Treat & Refer 4+	Treat & Refer 4+

- Low risk (if no other markers of kidney disease, no CKD)
- Moderately increased risk
- High risk
- Very high risk

ADA 2024  
Guidelines  
Recommend  
Reducing  
Albuminuria  
Levels  
to Slow CKD  
Progression in  
Patients With  
UACR  $\geq 300$   
mg/g<sup>1</sup>

### 6-Month Change in Albuminuria and Composite Kidney Endpoint in 41 Clinical Trials in Patients With UACR $\geq 30$ mg/g<sup>2,a</sup>



### ADA Standards of Medical Care in Diabetes—2024 Treatment Recommendation

**11.6:** In people with CKD who have  $\geq 300$  mg/g urinary albumin, a reduction of 30% or greater in mg/g urinary albumin is recommended to slow CKD progression (C)

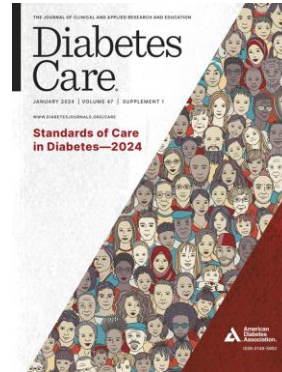
# UACR is the preferred, evidence-based method for albuminuria testing<sup>1,2</sup>

Gaps in CKD diagnosis may be attributed to use of less specific albuminuria tests<sup>1,3,4</sup>

	UACR (albumin + creatinine)	UPCR (protein + creatinine)	24-hour urine albumin	Albumin-sensitive urine dipstick
BENEFITS	<ul style="list-style-type: none"> <li>Preferred testing method per ADA and KDIGO guidelines<sup>1-3</sup></li> <li>Can detect low albumin concentrations typical of early kidney damage or CKD progression<sup>3,5</sup></li> <li>Corrects for hydration and is unaffected by urine concentration<sup>3</sup></li> </ul>	<ul style="list-style-type: none"> <li>Can detect proteins in the urine, an indicator of kidney damage<sup>3</sup></li> </ul>	<ul style="list-style-type: none"> <li>Unaffected by urine concentration<sup>3</sup></li> </ul>	<ul style="list-style-type: none"> <li>Historically used as a common testing method<sup>5</sup></li> </ul>
DRAWBACKS	<ul style="list-style-type: none"> <li>No known drawbacks</li> </ul>	<ul style="list-style-type: none"> <li>Measures proteins, not just albumin and is therefore not highly specific or sensitive to albumin<sup>3</sup></li> <li>May fail to detect low albumin concentrations typical of early kidney damage or CKD progression<sup>3</sup></li> </ul>	<ul style="list-style-type: none"> <li>Specimen collection is time-consuming and burdensome<sup>3</sup></li> <li>Repeated tests are necessary over 3 to 6 months to confirm high albuminuria<sup>3</sup></li> </ul>	<ul style="list-style-type: none"> <li>Nearly 30% of patients with very high albuminuria were not identified appropriately through dipstick testing<sup>6</sup></li> <li>Urine concentration may affect accuracy (greater risk of false-positive and false-negative than other methods)<sup>3</sup></li> <li>Qualitative test that does not quantify the degree of albuminuria<sup>3</sup></li> <li>Accuracy may vary by dipstick manufacturer<sup>3</sup></li> <li>Measures only albumin, not creatinine<sup>3</sup></li> </ul>

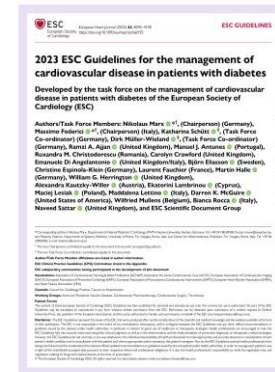
**References:** 1. Kidney Disease Improving Global Outcomes. *Kidney Int.* 2022;102(5S):S1-S127. 2. American Diabetes Association. *Diabetes Care.* 2023;46(suppl 1):S1-S291. 3. McGill JB et al. *BMJ Open Diab Res Care.* 2022;10(4):e002806. 4. Szczech LA et al. *PLoS One.* 2014;9(11):e110535. 5. Park JI et al. *PLoS One.* 2017;12(2):e0171106. 6. Nielsen CB et al. *Diagnostics (Basel).* 2022;12(2):457. 7. National Kidney Foundation. Accessed August 7, 2023. <https://www.kidney.org/content/laboratory-engagement-initiative-lei>

Multiple Major Guidelines recommend using BOTH UACR and eGFR to screen for CKD associated with T2D, assess CKD stage, and monitor CKD progression<sup>1-4</sup>



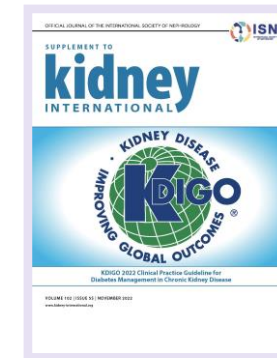
### 2024 ADA Standards of Care

At least annually, UACR and eGFR should be assessed in all people with T2D<sup>1</sup>



### 2023 ESC Guideline: Management of CVD in Patients with Diabetes

It is recommended that patients with diabetes are routinely screened for kidney disease, or have their CKD staged, by assessing eGFR and UACR<sup>2</sup>



### 2022 KDIGO Guidelines

Assess kidney function (eg, eGFR and UACR) every 3-12 months<sup>3</sup>



### 2022 AACE Guidelines

- Begin annual assessment of eGFR and UACR at diagnosis in patients with T2D<sup>3</sup>
- In moderate-to-severe CKD (stages 3 to 5), check UACR and eGFR more frequently (eg, every 3 to 6 months), depending on rate of progression and comorbidities<sup>4</sup>

# Healthcare Burden of CKD

# Increasing Albuminuria in Patients With T2D Burdens Both the Patient and the Healthcare System

Compared to patients with T2D and normal albuminuria, patients with T2D and moderately to severely increased albuminuria experience:

**2-4%**

higher rates of **ER services**

**4-10%**

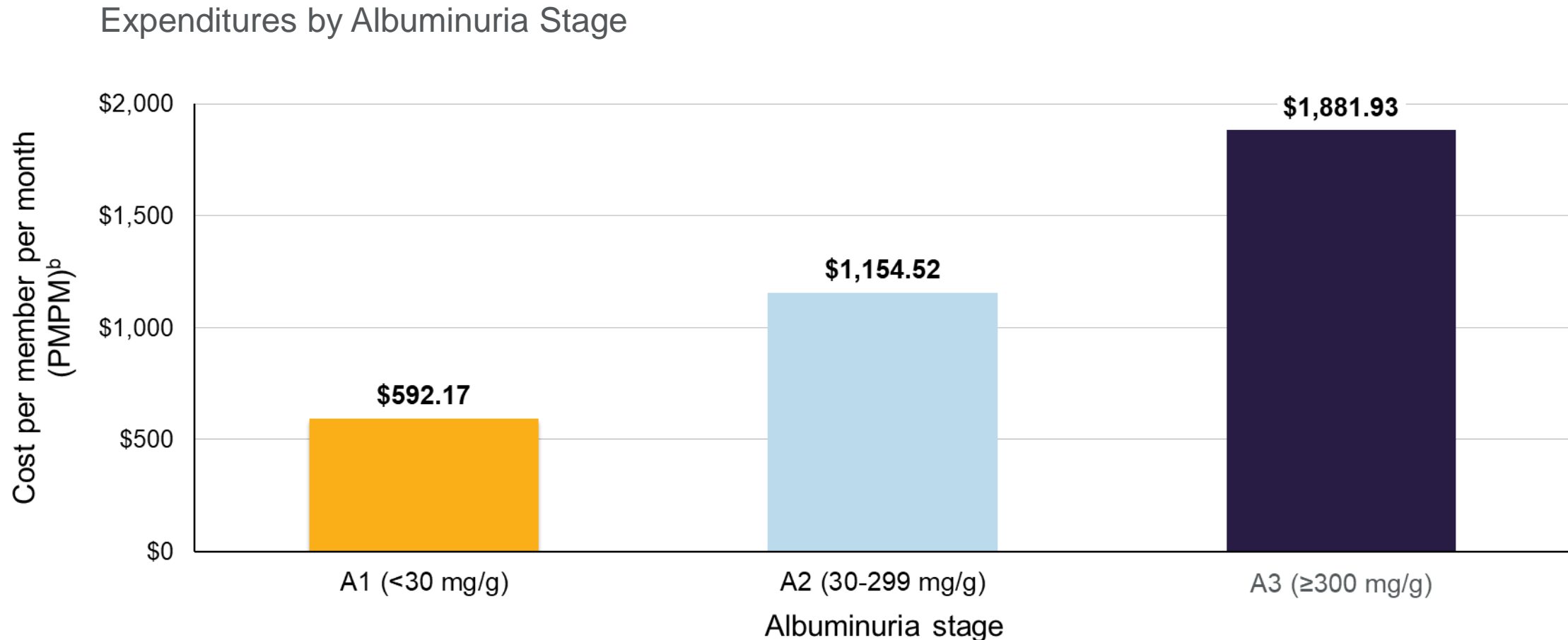
higher rates of **inpatient admissions**

**4-40x**

higher risks of **receiving dialysis**

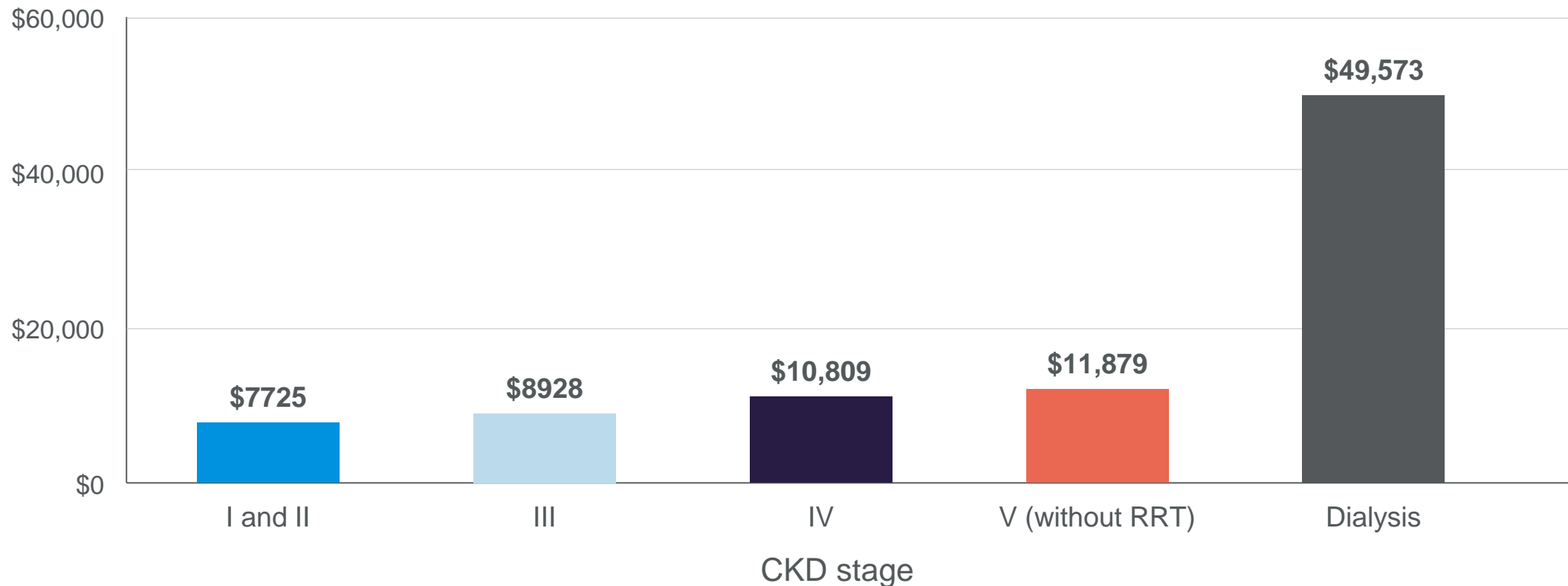


# Increasing Albuminuria Results in Higher Healthcare Costs



# Medical Costs Increase as CKD Progresses in Patients With CKD Associated With T2D

Estimated Ongoing 4-Month CKD Management Costs by CKD Stage



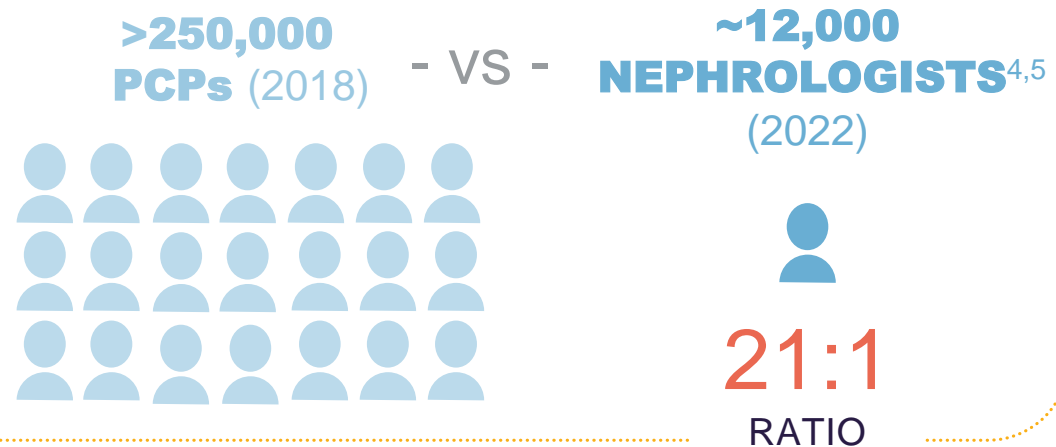
# Early UACR evaluation by PCPs may improve CKD diagnosis, monitoring, and treatment

## Nephrologists are often only consulted once patients with CKD have progressed to later stages<sup>1</sup>

### PCPs are key players in CKD detection and management:

- Patients with T2D and CKD stages 1 to 3 are often evaluated in the primary care setting, but are often not diagnosed or actively managed by PCPs<sup>1-3</sup>
- Activating PCPs to diagnose and treat patients with earlier stages of CKD may help ensure nephrologists can focus on treating later-stage patients with more acute treatment needs<sup>1,2</sup>
- Incorporating UACR into routine examinations can help improve awareness, diagnosis, and monitoring, and subsequently guide evidence-based treatment<sup>6-8</sup>

### IN THE UNITED STATES



# Louisiana Kidney Disease Prevention and Education Task Force

## Summary of Recommendations:

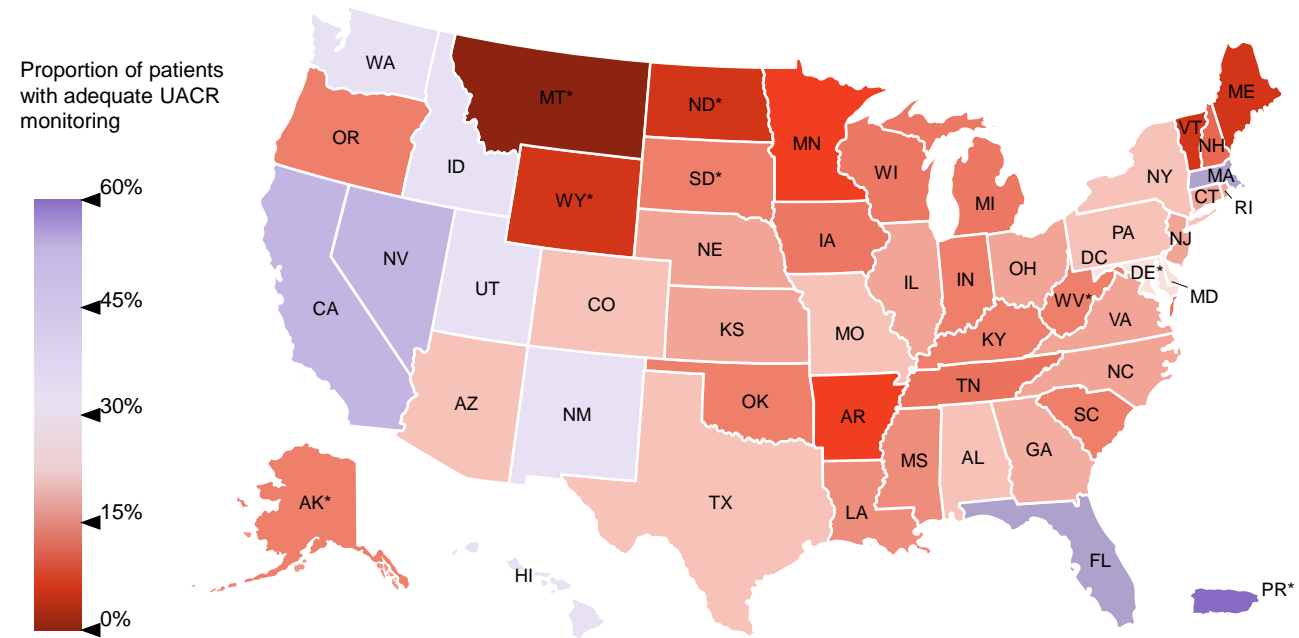
- The first message should be the importance of early referral...
- ...educate providers to review medications for abuse of NSAIDs as well as hypertension and diabetes screening for early detection of kidney disease...
- The old pattern of referral to nephrologist was to wait till the GFR dropped to 20. We need to educate all providers that Nephrologists should start to see patients with a GFR of 50 (stage 3a). We need providers to screen all of their patients yearly with a blood pressure check, blood test such as a CMP, and a urine protein creatinine ratio
- For the last 20 years, the only therapy for the prevention of chronic kidney disease was to use an ACE inhibitor or an ARB medication- example is lisinopril or losartan. We now have additional kidney therapies that also should be employed to slow or prevent progression.

Only 1 in 5 patients with CKD associated with T2D receives guideline-based UACR assessment

## UACR testing rates vary widely state to state and no state has registered UACR testing rates of $\geq 60\%$ in patients with CKD associated with T2D

### MONITORING CKD

UACR Monitoring Adequacy, by State (Patients With CKD Associated With T2D)\*



Only 20.3% of patients had adequate UACR monitoring, defined as frequency of evaluation that met KDIGO Guideline recommendations

Results of a retrospective study using data from Optum Clinformatics for January 2015 to January 2019 dates of service. Monitoring adequacy was defined as meeting KDIGO guidelines for eGFR and UACR measurement.

Reference: Betts KA et al. *Am J Manag Care*. 2022;28(suppl 6):S112-S119.

CKD is common:  
Up to ~40% of  
patients with  
T2D have CKD,  
BUT screening  
rates for CKD  
are low

## INCOMPLETE TESTING

CKD diagnosis in patients with T2D is established by eGFR, an evaluation of kidney function, and UACR, an evaluation of kidney damage, over a 12-month period<sup>3</sup>

eGFR testing  
rates are

**>94%**

in patients with T2D<sup>4\*</sup>



UACR testing  
rates are

**38.7%**<sup>4\*†</sup>



despite recommendations from clinical practice guidelines to test UACR at least once per year in patients with T2D<sup>5-7</sup>

## REDUCED CARE QUALITY

The HEDIS<sup>®</sup> quality measure evaluates the performance of UACR and eGFR tests in patients with diabetes<sup>8</sup>

Performance on this measure is now included in Medicare and NCQA Star Ratings<sup>8,9</sup>



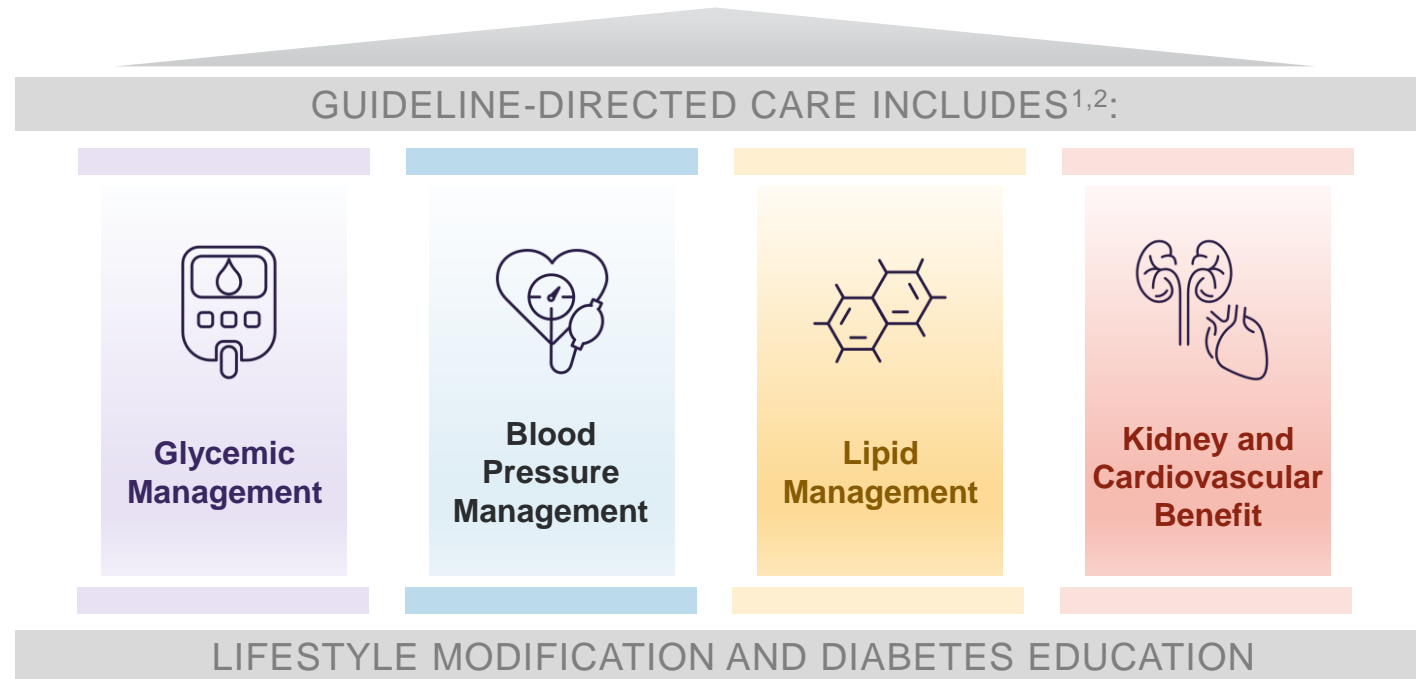
## IMPROPER CODING

Patients may have lab-indicated CKD without corresponding diagnosis codes

**Nearly 75%** of Medicare Advantage patients with lab-indicated CKD did not have a corresponding diagnosis code<sup>10</sup>



# Treatment Guidelines for CKD associated with T2D



# Treatment for Renoprotection in T2D-RAAS BLOCKERS: RENAAAL and IDNT

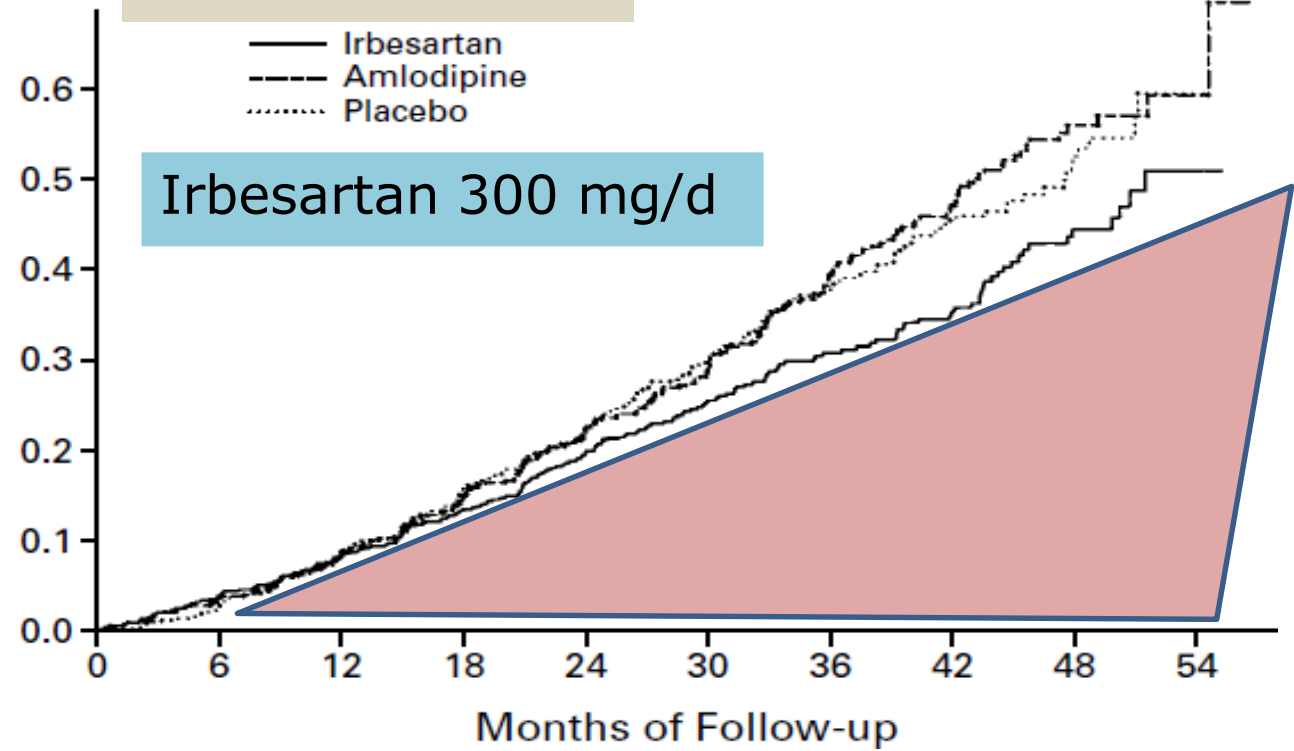
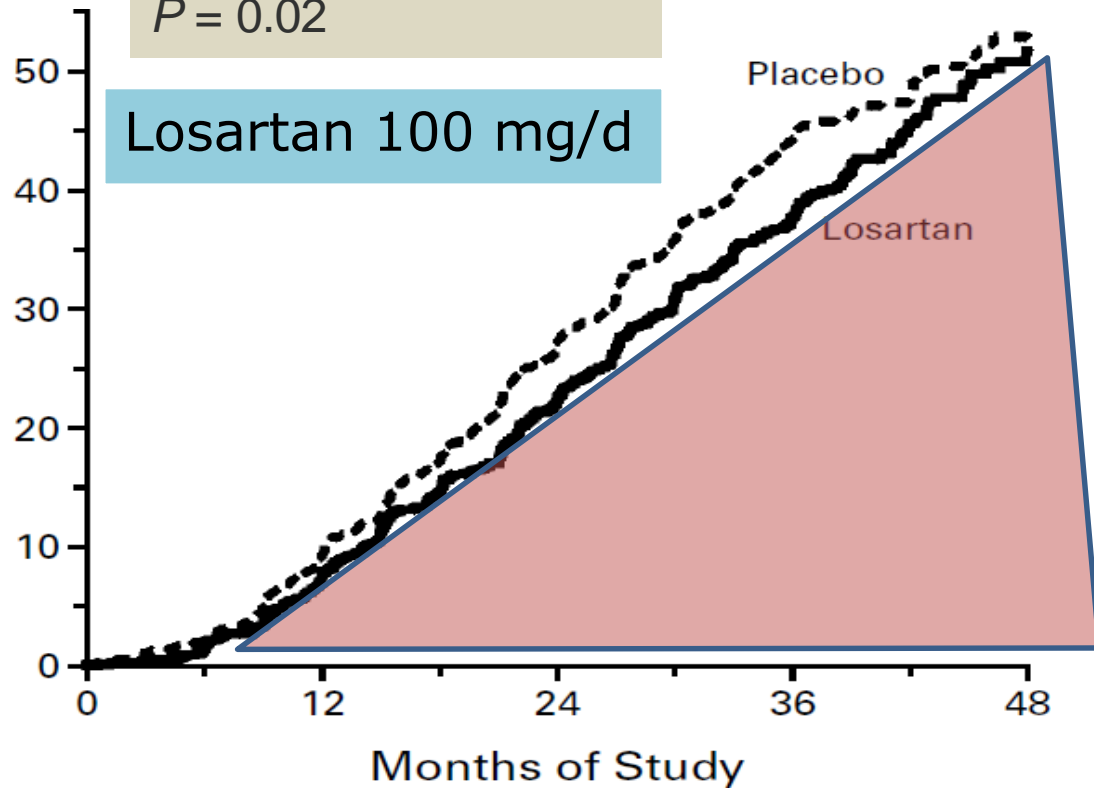
Doubling of serum creatinine, ESKD, or death

**RENAAL**

**IDNT**

Risk reduction, 16%  
 $P = 0.02$

Risk reduction, 20%  
 $P = 0.02$



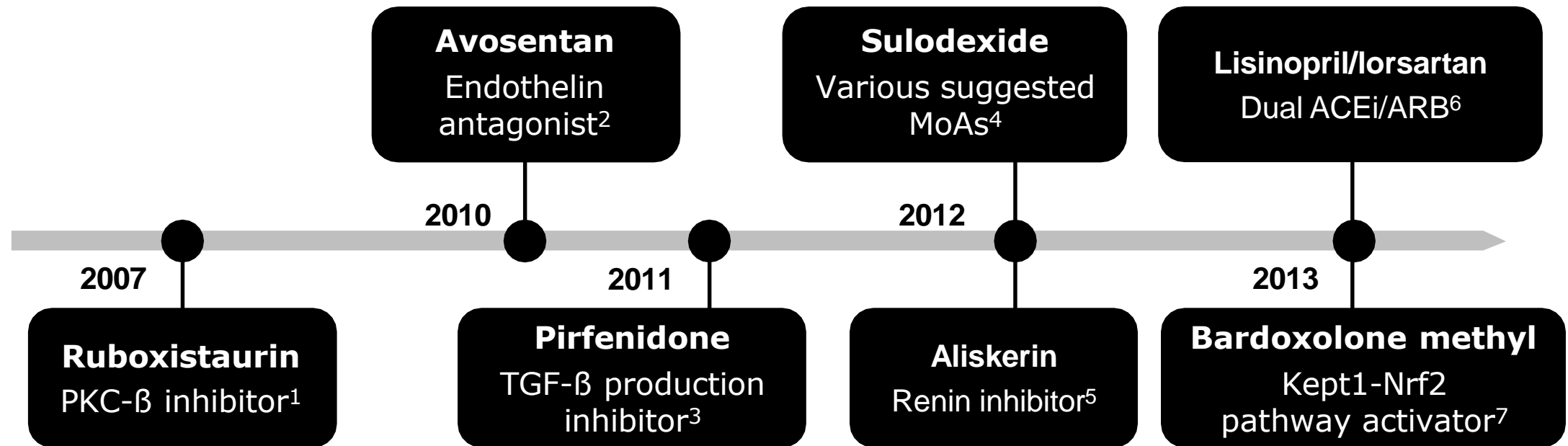
Brenner B, et al. *N Engl J Med.* 2001;345(12):861-869.

Lewis EJ, et al. *N Engl J Med.* 2001;345(12):851-860.

# Pillars of Therapy in CKD associated with T2D



# Since RENAAL and IDNT, New Therapeutic Strategies for Patients With T2DM and CKD Have Failed



1. Tuttle KR, et al. *Clin J Am Soc Nephrol*. 2007;2(4):631-636.

2. Mann JFE, et al. *J Am Soc Nephrol*. 2010;21(3):527-535.

3. Sharma K, et al. *J Am Soc Nephrol*. 2011;22(6):1144-1151.

4. Packham DK, et al. *J Am Soc Nephrol*. 2012;23(1):123-130.

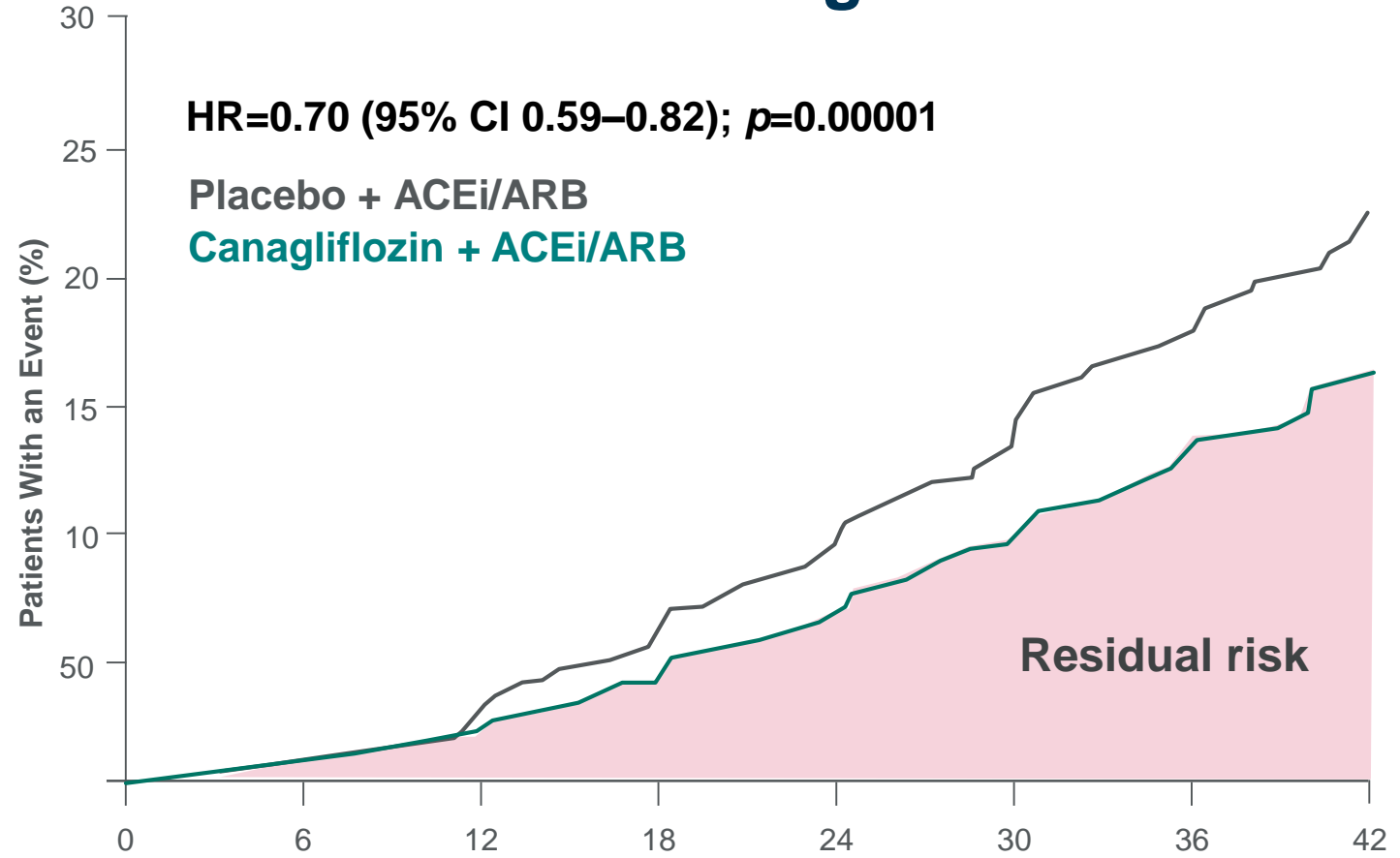
5. Parving HH, et al. *N Engl J Med*. 2012;367(23):2204-2213.

6. Fried LF, et al. *N Engl J Med*. 2013;369(20):1892-1903.

7. de Zeeuw D, et al. *N Engl J Med*. 2013;369(26):2492-2503.

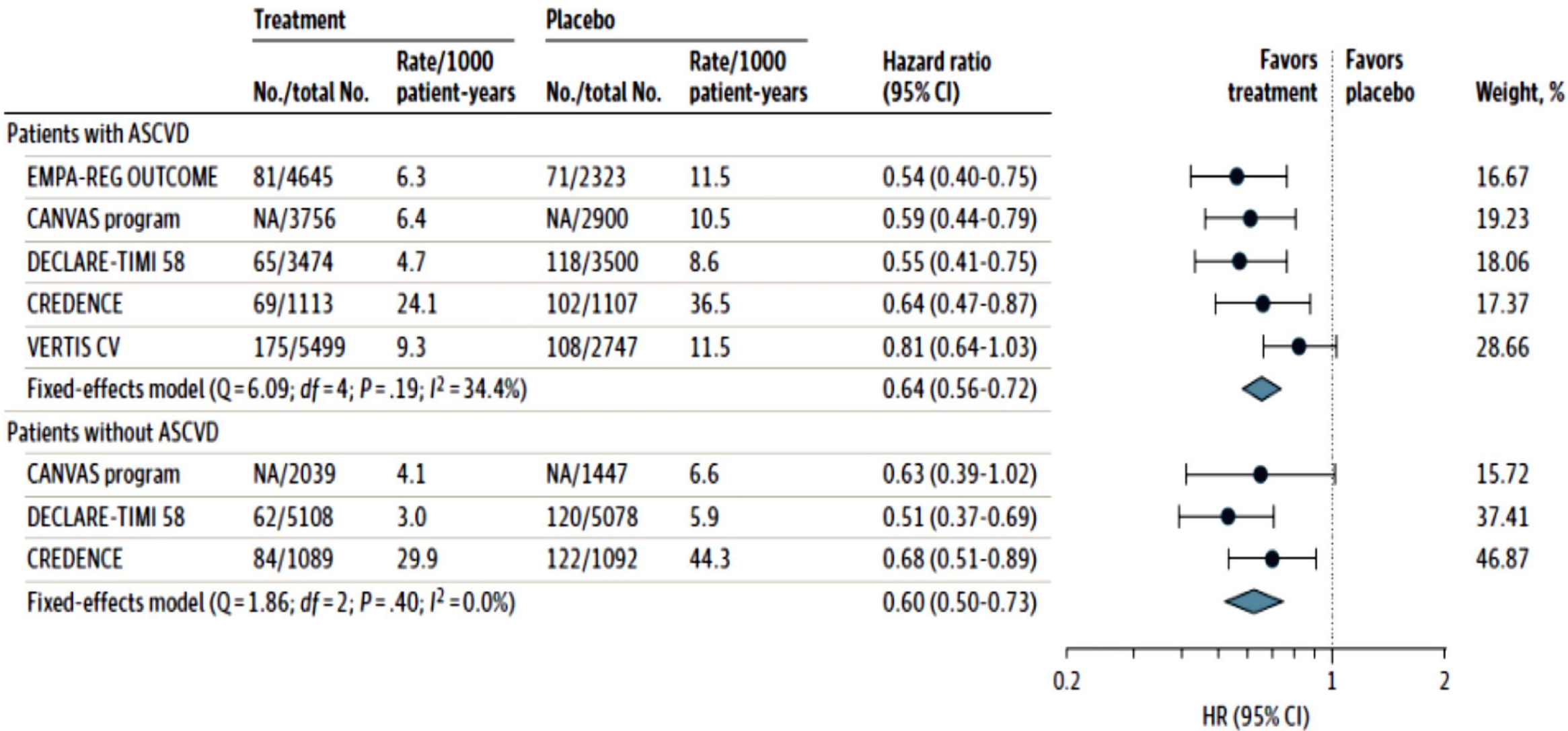
30 Treatment Guidelines for CKD associated with T2D

# Despite RAAS Blockade and SGLT-2 Inhibition, Patients With CKD Associated With T2D Have Residual Risk of CKD Progression



# Meta-analysis of SGLT2i trials on the composite of worsening of renal function, end-stage renal disease, or renal death

## B Kidney outcomes by ASCVD status



## SGLT2 Inhibitors

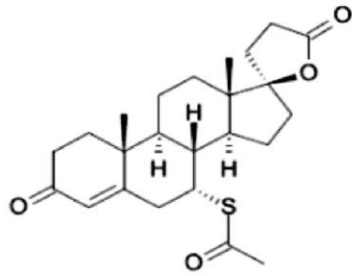
**SGLT2 inhibitors are  
cardiorenal risk-reducing  
drugs irrespective of  
glucose levels**

# Pillars of Therapy in CKD associated with T2D

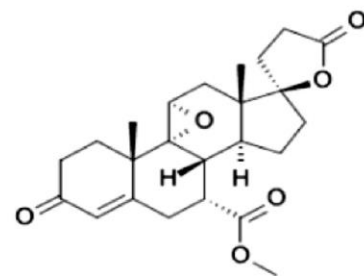


# TWO DIFFERENT CLASSES OF AGENTS THAT INHIBIT THE MR

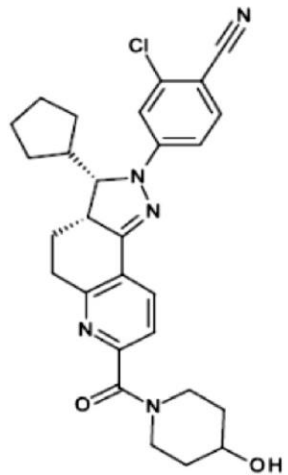
## Steroidal MRAs (Aldosterone Antagonists)



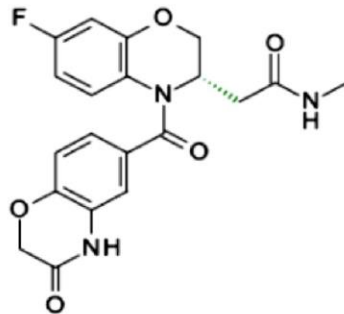
**Spironolactone**



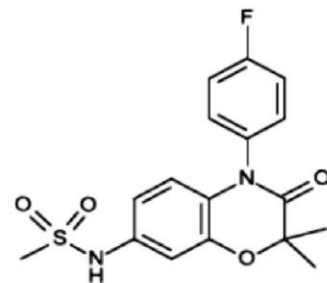
**Eplerenone**



**KBP-5074  
(Phase II)**

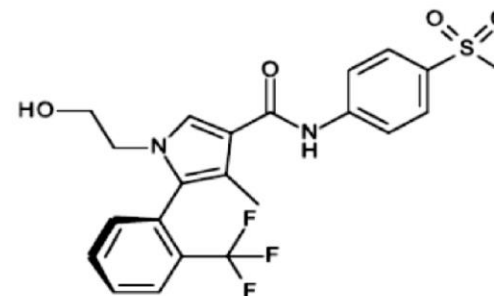


**AZD9977  
(Phase II)**

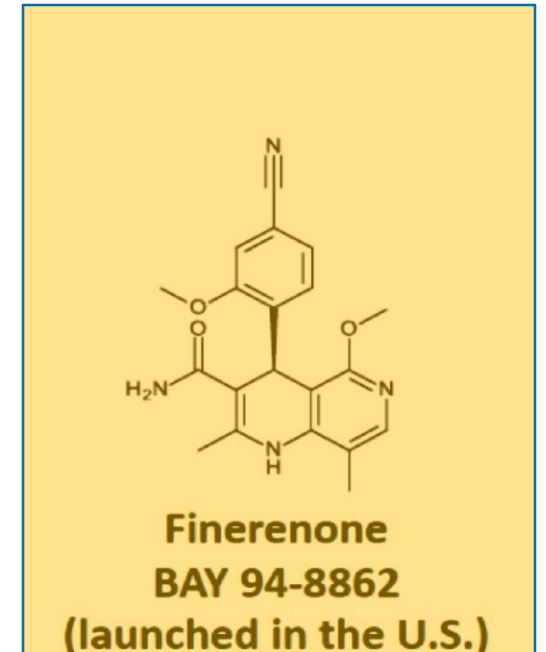


**Apararenone  
MT-3995  
(Phase II)**

## Nonsteroidal MRAs

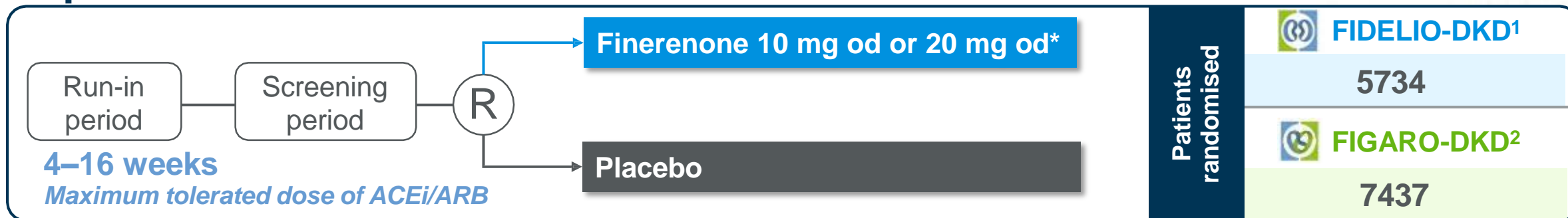


**Esaxerenone  
CS-3150  
(launched in Japan)**



**Finerenone  
BAY 94-8862  
(launched in the U.S.)**

# The FIDELIO-DKD and FIGARO-DKD phase III trials investigated the effects of finerenone on kidney and CV outcomes in over 13,000 patients with CKD and T2D<sup>1,2</sup>



	<b>FIDELIO-DKD<sup>1</sup></b>	<b>FIGARO-DKD<sup>2</sup></b>	<b>FIDELITY<sup>3</sup></b> Prespecified pooled analysis
<b>Clinical efficacy primary endpoint</b>	<b>Composite endpoint:</b> Time to kidney failure, <sup>#</sup> sustained $\geq 40\%$ eGFR decline, or kidney-related death	<b>Composite endpoint:</b> Time to CV death, non-fatal MI, non-fatal stroke, or hospitalisation for HF	<b>Key outcomes</b> <b>CV composite:</b> Time to CV death, non-fatal MI, non-fatal stroke, or hospitalisation for HF
<b>Key secondary endpoint</b>	Same as primary endpoint in <b>FIGARO-DKD</b>	Same as primary endpoint in <b>FIDELIO-DKD</b>	<b>57% kidney composite:</b> Time to kidney failure, <sup>#</sup> sustained $\geq 57\%$ eGFR decline, or kidney-related death

\*Patients received an initial dose of finerenone of 10 mg od or 20 mg od based on an eGFR at the screening visit of 25–<60 or  $\geq 60$  ml/min/1.73 m<sup>2</sup>, respectively.<sup>1,2</sup> Up-titration to finerenone 20 mg od was permitted at any time after visit 2 (month 1); down-titration to finerenone 10 mg od was permitted at any time after start of treatment. Dose titrations were initiated in response to changes in potassium and eGFR<sup>1,2</sup>; <sup>#</sup>kidney failure defined as initiation of chronic dialysis for  $\geq 90$  days, kidney transplantation or sustained eGFR <15 ml/min/1.73 m<sup>2</sup>.<sup>2,3</sup>

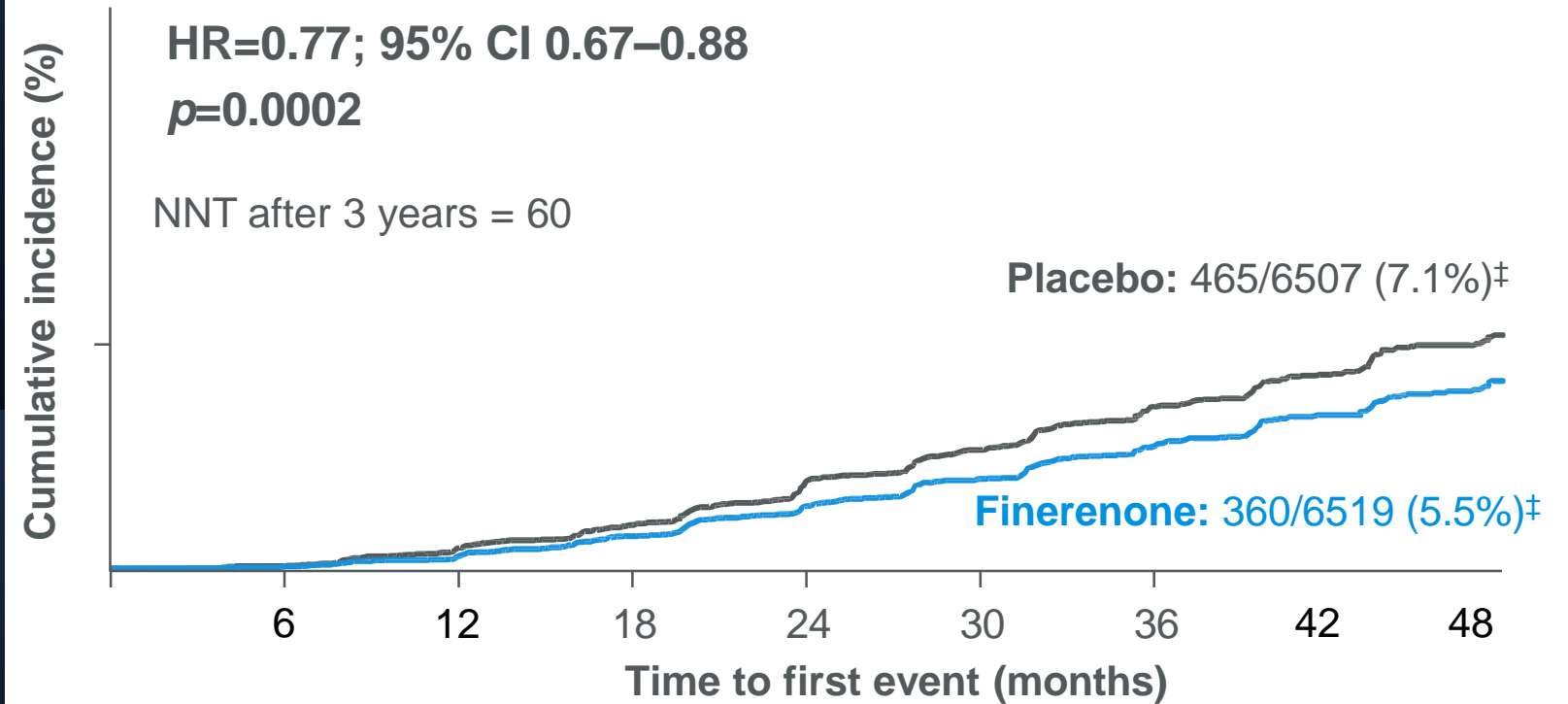
ACEi, angiotensin-converting enzyme inhibitor; ARB, angiotensin receptor blocker; CKD, chronic kidney disease; CV, cardiovascular; eGFR, estimated glomerular filtration rate; HF, heart failure;

MI, myocardial infarction; od, once daily; R, randomisation; T2D, type 2 diabetes

1. Bakris GL, et al. *Am J Nephrol* 2019;50:333–344; 2. Ruilope LM, et al. *Am J Nephrol* 2019;50:345–356; 3. Agarwal R, et al. *Eur J Heart* 2022;43:474–484

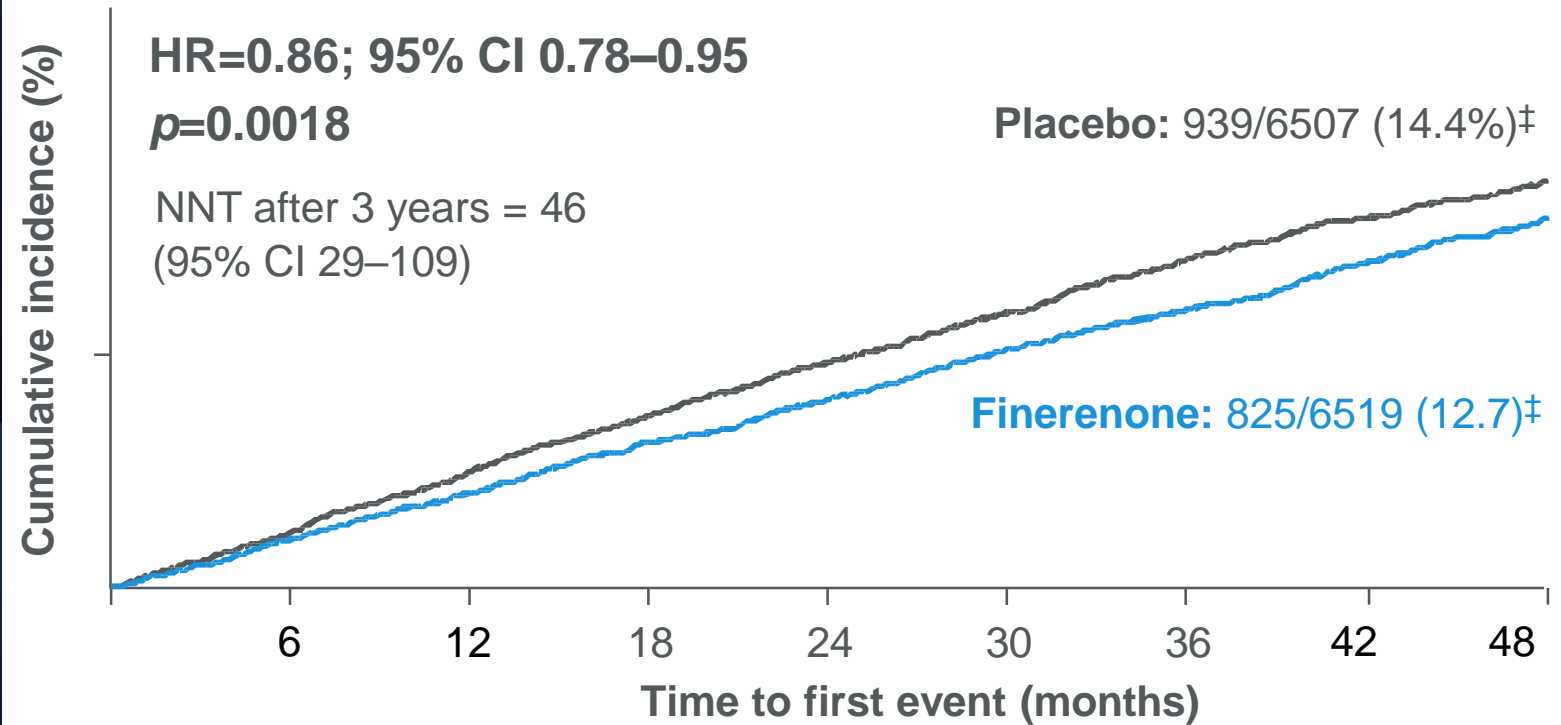
FIDELITY  
pooled  
analysis:  
Effect of  
finerenone on  
the  $\geq 57\%$   
eGFR kidney  
composite  
outcome

Time to kidney failure, sustained  $\geq 57\%$  decrease in eGFR from baseline, or renal death

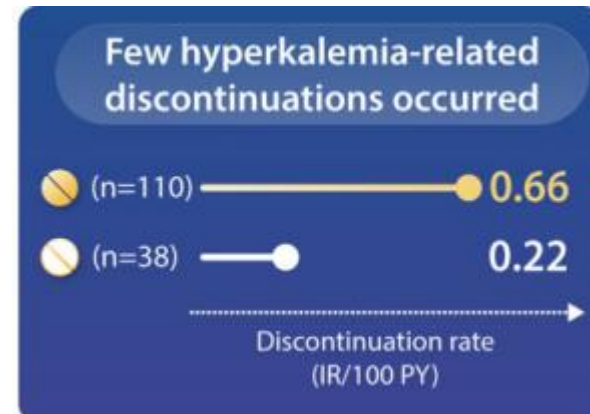
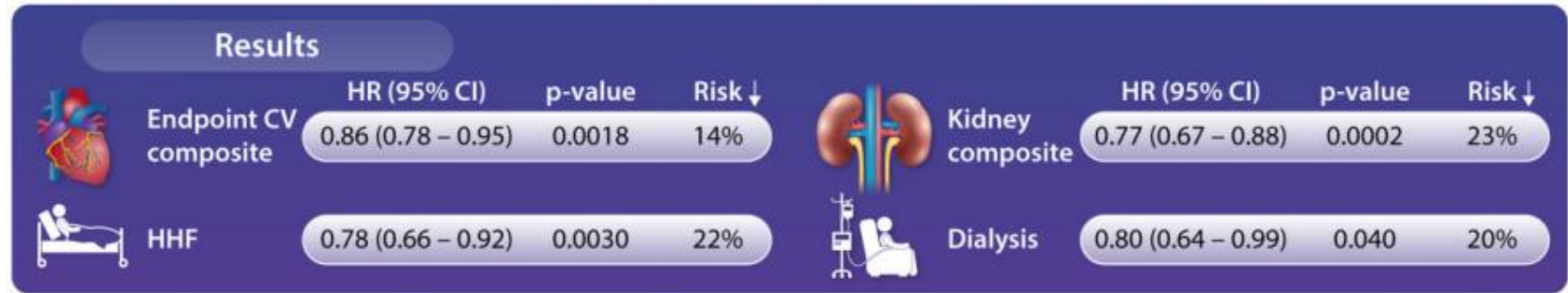


FIDELITY  
pooled  
analysis:  
Finerenone  
significantly  
reduced the  
risk of the CV  
composite  
outcome by  
14%

**Time to CV death, non-fatal MI, non-fatal stroke, or hospitalisation for HF**



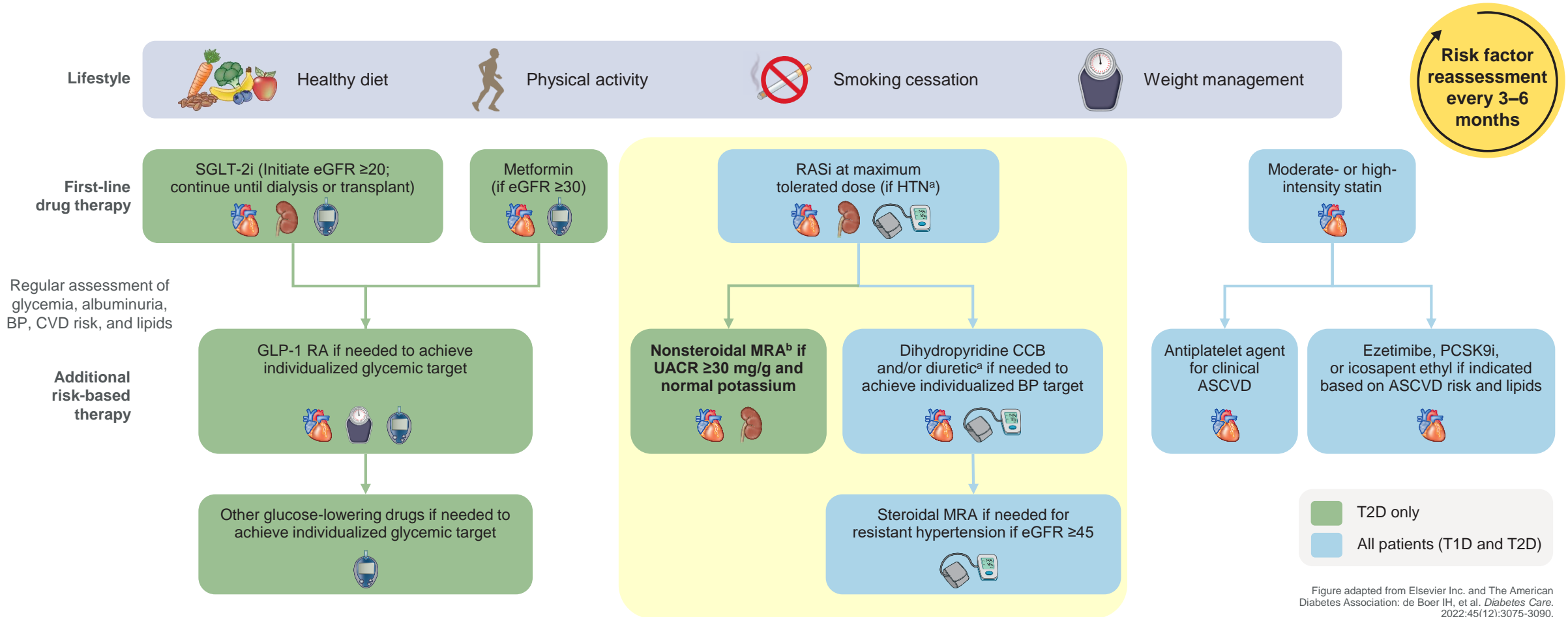
# FIDELITY pooled analysis: Conclusions



# Pillars of Therapy in CKD associated with T2D



# ADA-KDIGO Holistic Approach for Improving Cardiorenal Outcomes in Patients With Diabetes and CKD<sup>1</sup>



<sup>a</sup>ACEi or ARB should be first-line therapy for hypertension when albuminuria is present; otherwise dihydropyridine CCB or diuretic can also be considered; all 3 classes are often needed to attain BP targets.<sup>1</sup>

<sup>b</sup>KERENDIA® (finerenone) is currently the only nonsteroidal MRA with proven clinical kidney and CV benefits for adult patients with CKD associated with T2D.<sup>1,2</sup>

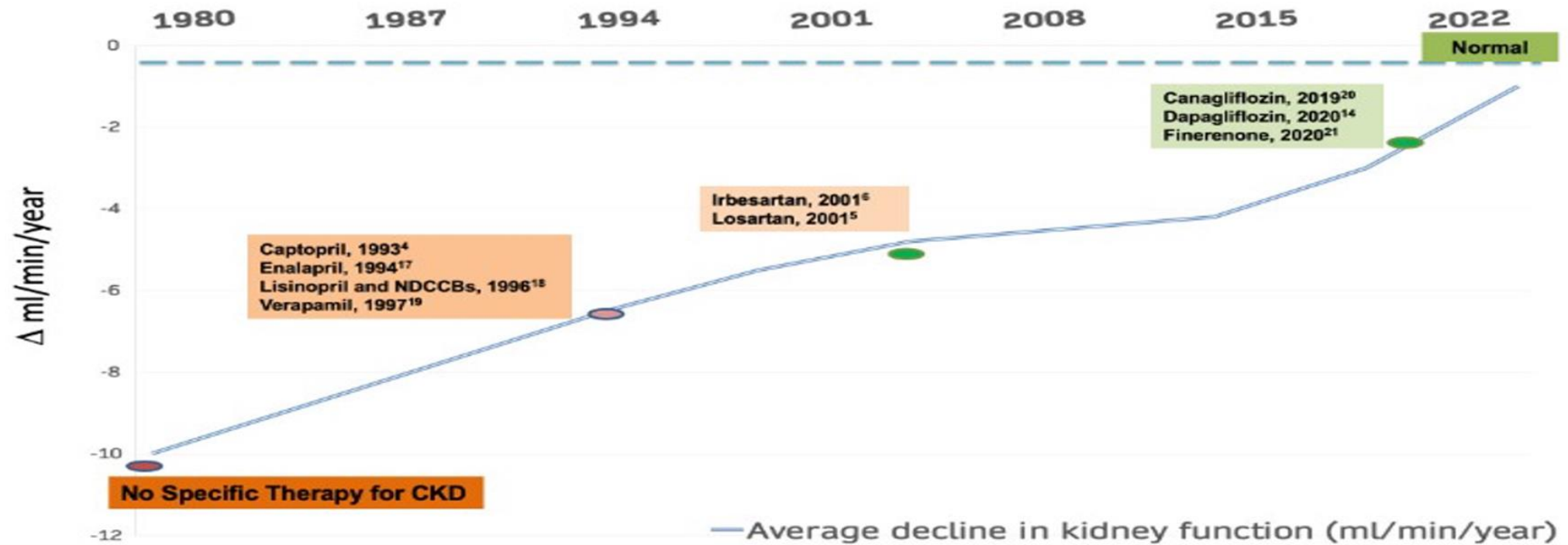
Abbreviations in notes page.

1. de Boer IH, et al. *Diabetes Care*. 2022;45(12):3075-3090. 2. Kerendia. Package Insert. Bayer Healthcare Pharmaceuticals Inc; 2022.

Figure adapted from Elsevier Inc. and The American Diabetes Association: de Boer IH, et al. *Diabetes Care*. 2022;45(12):3075-3090.

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# History of Intervention to Slow GFR Decline



Thank You  
Questions