Diabetic Kidney Disease Updates

Hussein Sheashaa, MD, FACP

Professor of Nephrology, Urology and Nephrology Center and Director of Medical E-Learning Unit, Mansoura University, and Executive Director of ESNT- Virtual Academy: http://lms.mans.edu.eg/esnt/

***3rd GCC Organ transplantation and Nephrology Congress*, Kuwait, January 18-21, 2017**

Urology and Nephrology Center

Diabetic Kidney Disease Update articles

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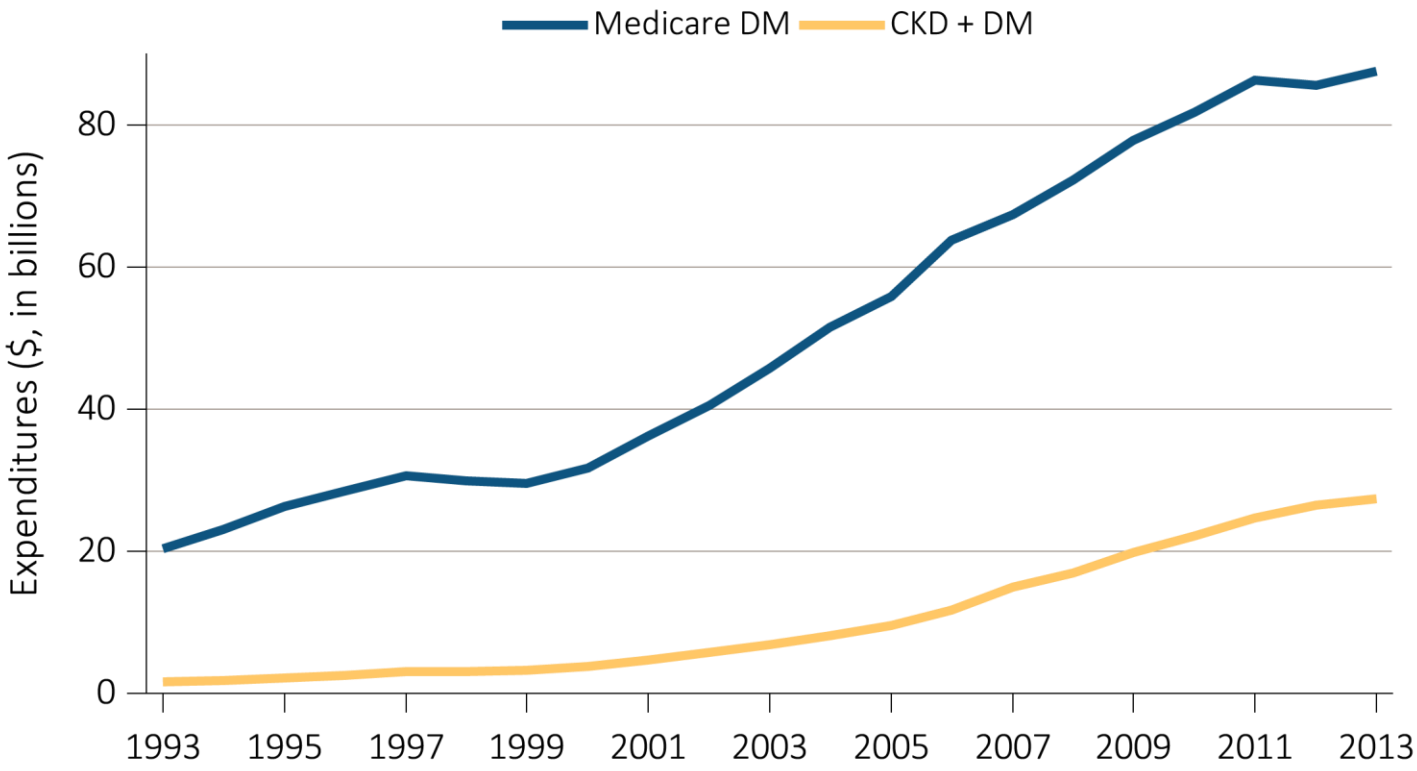
Corners

1. Why?
2. How?
3. Presentations
4. Target glycemic control
5. HbA1c
6. Antihyperglycemics
7. Antihypertensive therapy
8. Novel Therapy
9. RRT
10. Closing

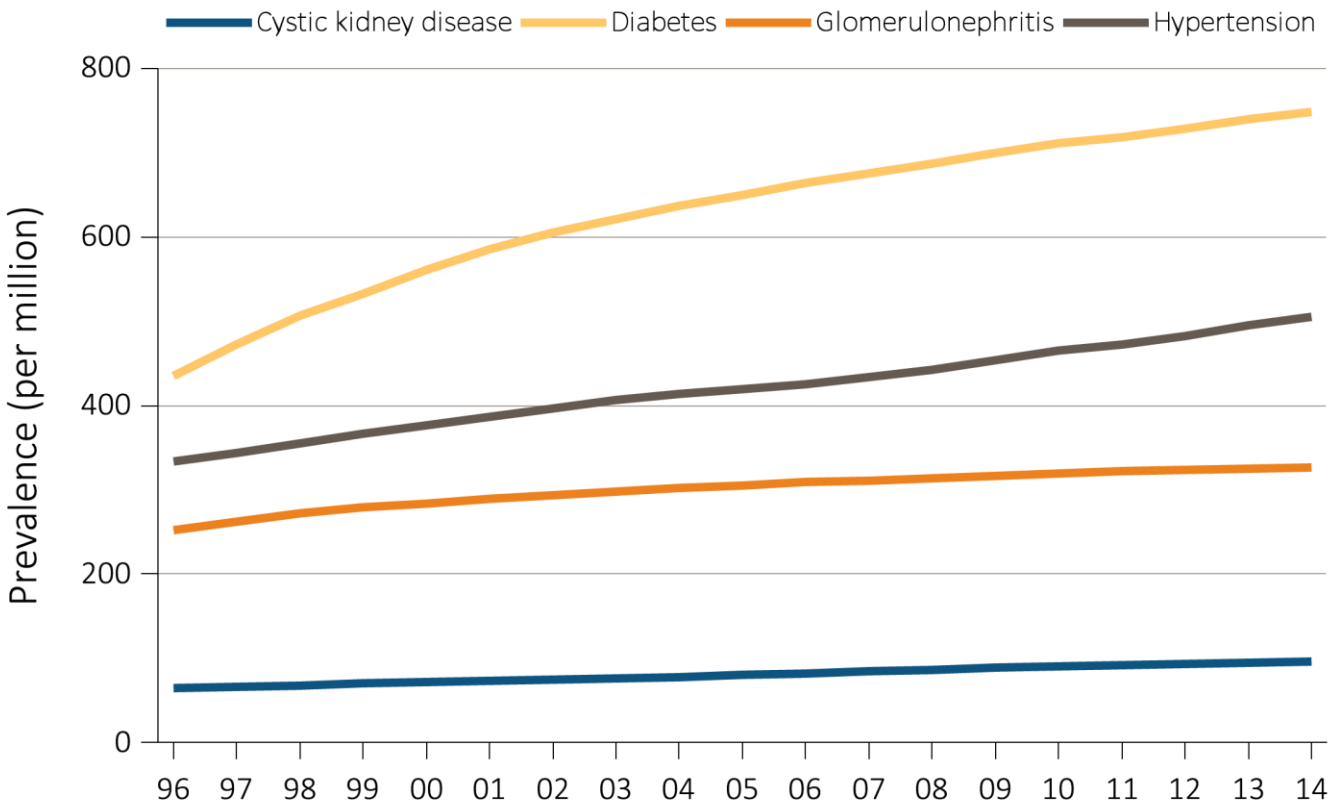
Why?
1. Cost



USRDS
UNITED STATES RENAL DATA SYSTEM

2015

Why?
Prevalence of ESRD



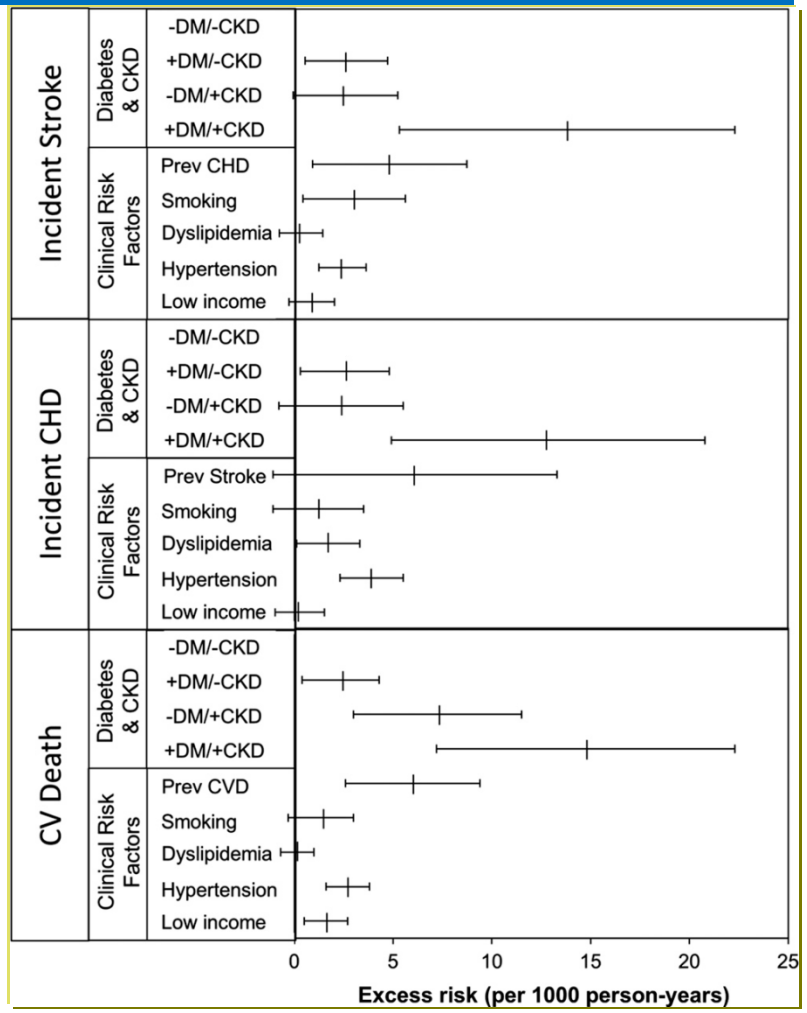
USRDS
UNITED STATES RENAL DATA SYSTEM

2016 ANNUAL DATA REPORT

Why?
4. CV Disease and Death

All	No Diabetes		Diabetes	
	No CKD	CKD	No CKD	CKD
3211	2297 (71.5)	257 (8.0)	456 (14.2)	201 (6.3)

CJASN ePress. Published on June 23, 2016



Why?
4. Mortality

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Cause of Death	Age at risk (yr)	No. of Deaths with Diabetes/ No. of Deaths without Diabetes	Rate Ratio (95% CI)
Acute diabetic			
	35–59	76/30	
	60–74	125/28	
	75–84	100/34	
Renal			
	35–59	299/98	31.1 (24.2–39.8)
	60–74	510/138	13.9 (11.5–16.9)
	75–84	223/154	5.1 (4.1–6.3)
Cardiac			
	35–59	117/243	4.6 (3.5–5.8)
	60–74	384/439	3.4 (3.0–3.9)
	75–84	291/539	2.0 (1.7–2.3)
Cerebrovascular			
	35–59	47/84	4.6 (3.0–7.1)
	60–74	147/165	3.3 (2.6–4.1)
	75–84	110/204	1.9 (1.5–2.4)

50,000 men and 100,000 women 35 years of age or older into a prospective study in Mexico City, Mexico

N Engl J Med 2016;375:1961-71.

Corners

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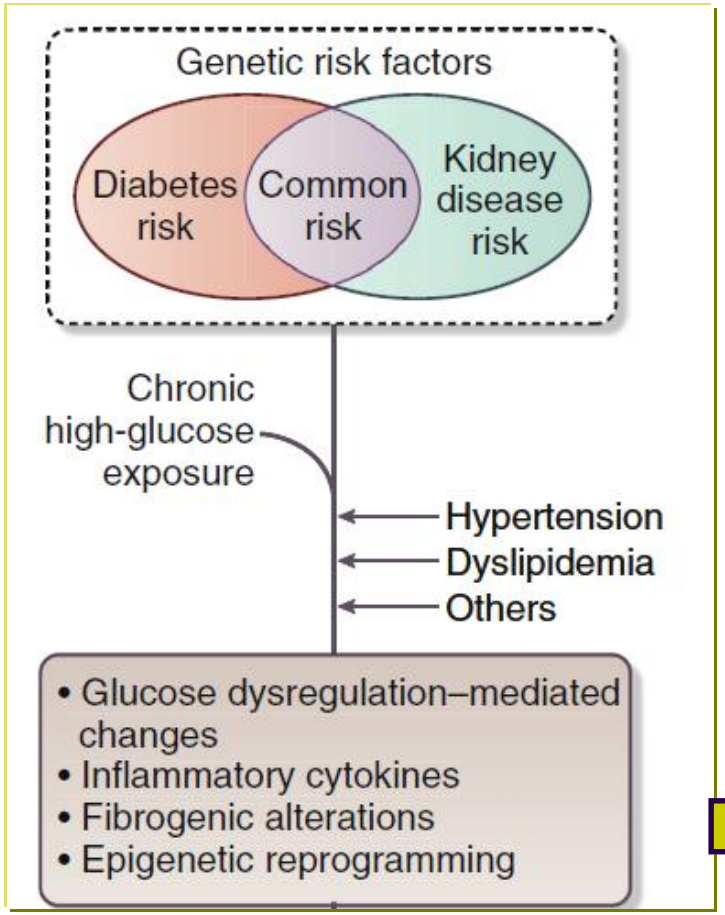
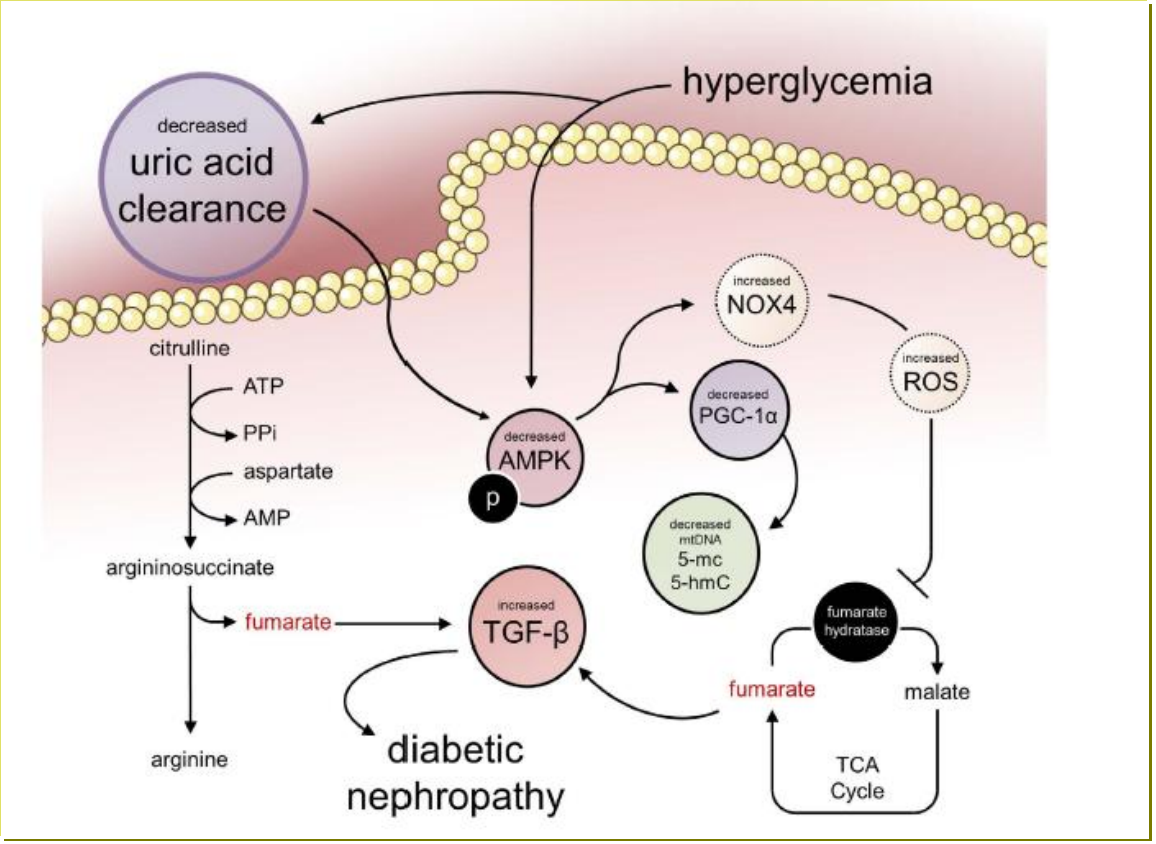
Pathophysiology: Working Hypothesis



Development of kidney disease in diabetes

Kidney International (2016) 89, 269–271

Pathophysiology:
Metabolic Memory



Sci Rep.2017 Jan 12;7:40544

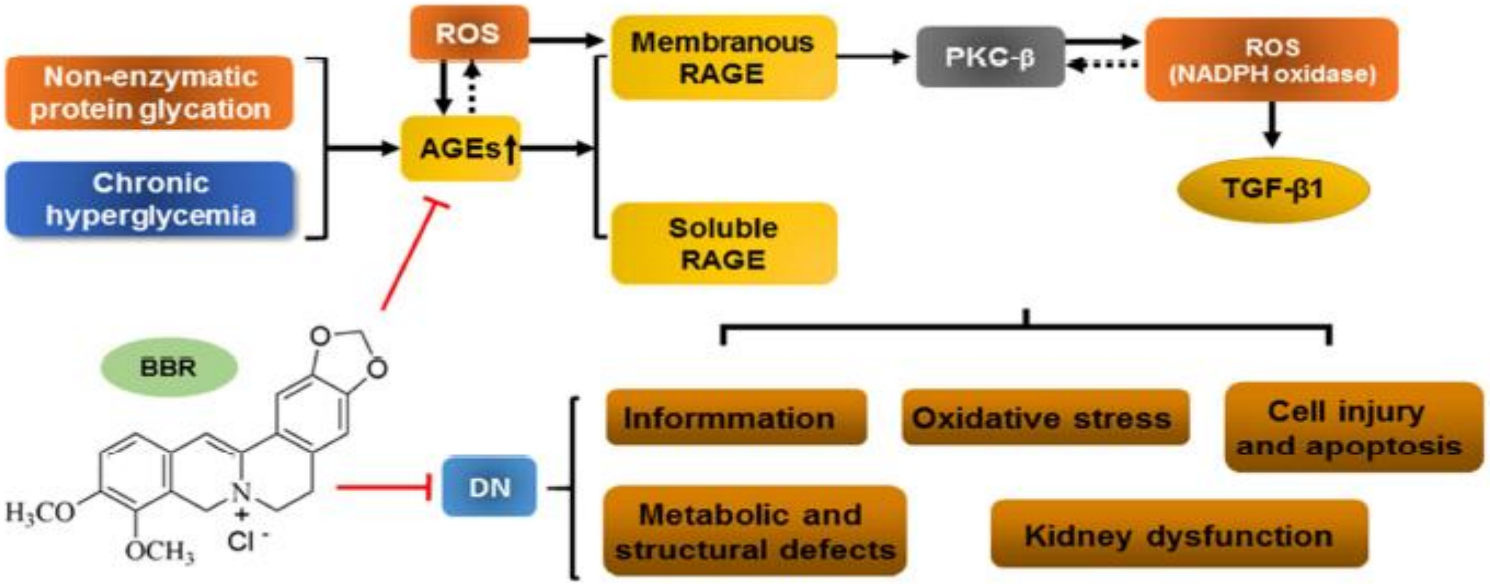
Pathophysiology:
AGEs Pathway

Urology and Nephrology Center

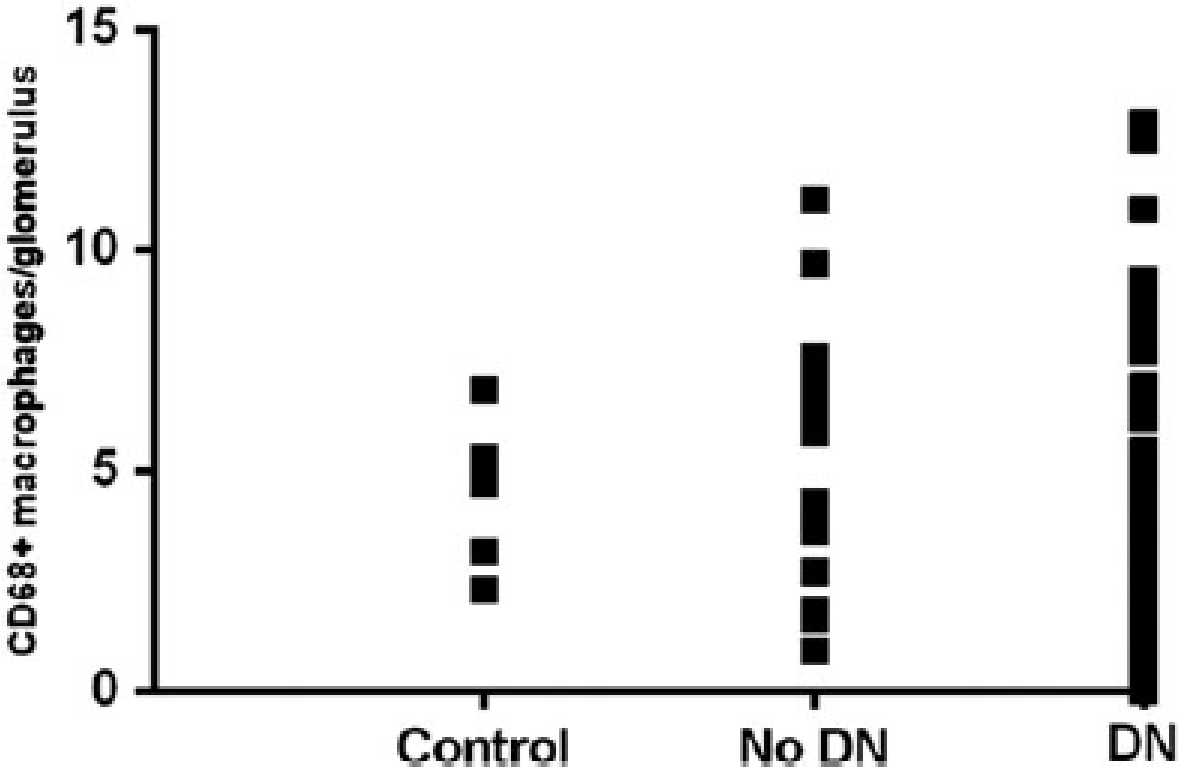
Accepted Manuscript

Accepted Date: 9 January 2017

Berberine exerts renoprotective effects by regulating the AGEs-RAGE signaling pathway in mesangial cells during diabetic nephropathy

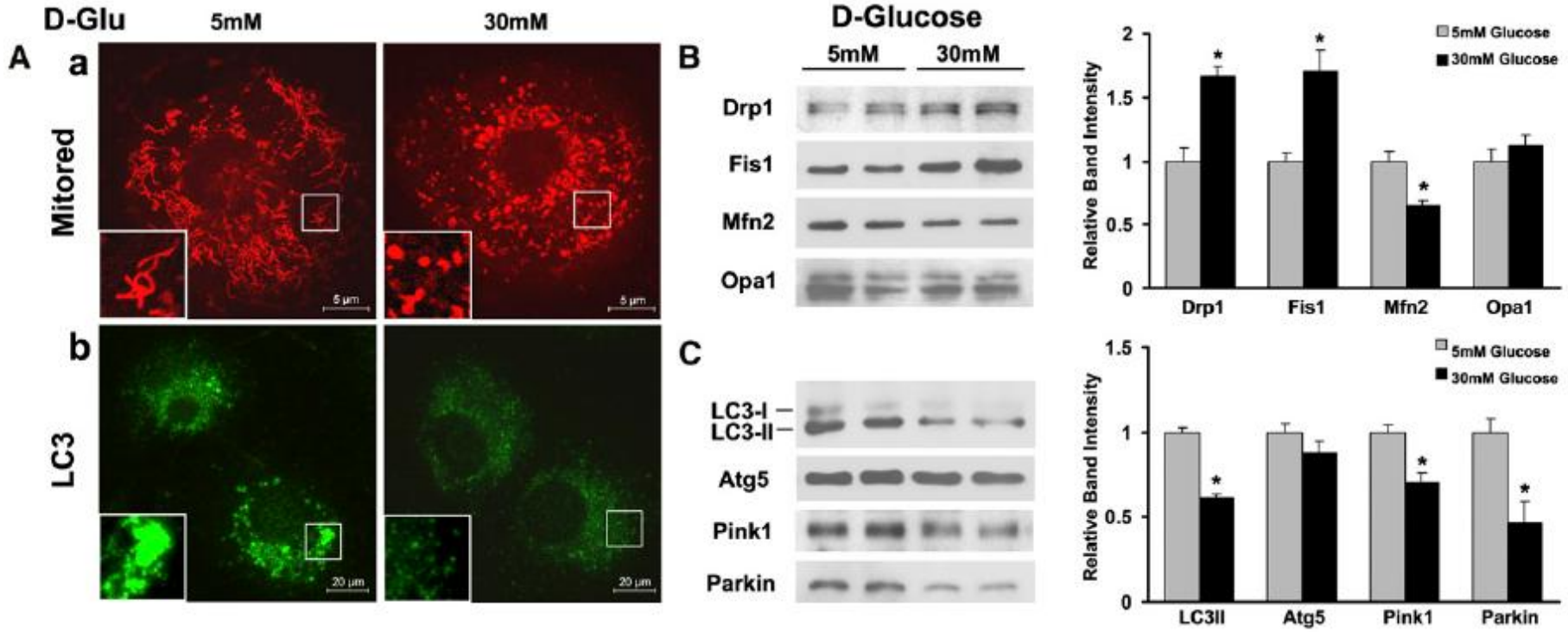


Pathophysiology: Role of Macrophages



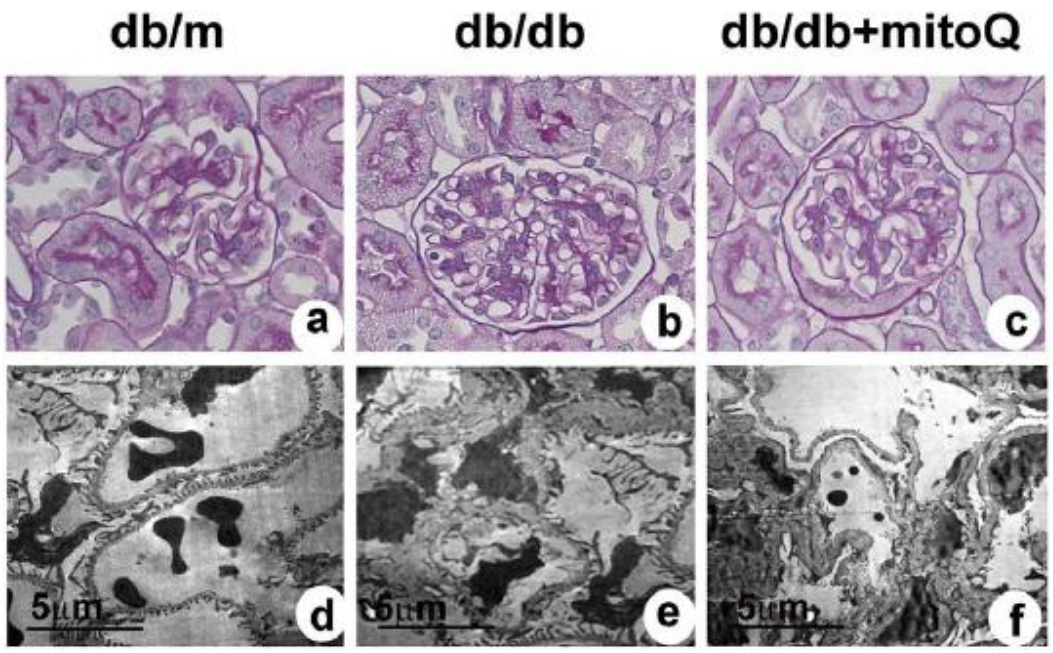
NDT Advance Access published July 14, 2016

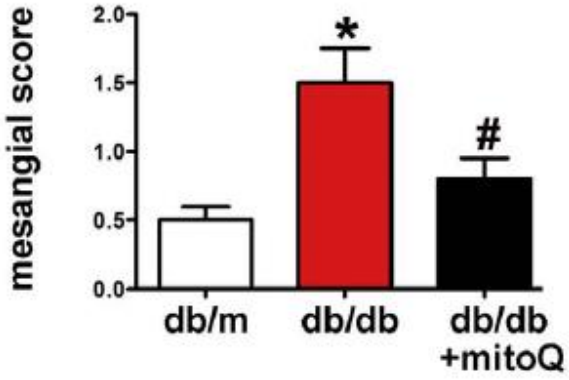
Pathophysiology:
Myo-Inositol Oxygenase and Mitophagy

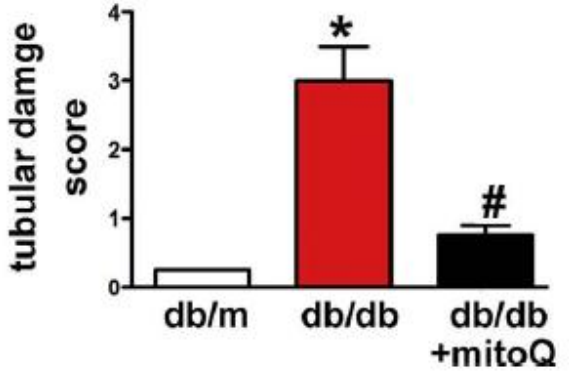


J AmSoc Nephrol 26: 1304–1321, 2015

Pathophysiology: Mitophagy and MitoQ







Redox Biology 11 (2017) 297–311

Corners

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DKD:
Clinical Manifestations

Urology and Nephrology Center

DNG Dakahlia Nephrology Group

Silent diabetic nephropathy

Samar M. Said[1] and Samih H. Nasr[1]

Kidney International (2016) 90, 24–26;

DKD:
Clinical Manifestations

Urology and Nephrology Center

Research

n 6251

JAMA | Original Investigation

Clinical Manifestations of Kidney Disease Among US Adults With Diabetes, 1988-2014

Maryam Afkarian, MD, PhD; Leila R. Zelnick, PhD; Yoshio N. Hall, MD; Patrick J. Heagerty, PhD; Katherine Tuttle, MD, FASN, FACP; Noel S. Weiss, MD, DrPH; Ian H. de Boer, MD, MS

Question Have the clinical manifestations of kidney disease among adults with diabetes changed over time?

JAMA. 2016;316(6):602-610

DKD:
Clinical Manifestations

Urology and Nephrology Center

Dakahlia Nephrology Group

Table 2 – Clinical and laboratorial characteristics of patients with diabetic kidney disease.

	NA-DKD ($n=68$)	A-DKD ($n=78$)	p
Age, years	75.1 (8.5)	71.0 (10.2)	0.021
Male gender, %	48.5	65.4	0.045
Duration of diabetes, years, median	19.0 (10-30)	16.0 (11-25)	ns
More than 15 years of diabetes, %	38.2	44.9	ns
Dyslipidemia, %	52.9	67.9	ns
Hypertension, %	66.2	91.0	0.000
Body mass index, kg/m^2	29.4 (5.5)	27.6 (5.2)	ns
Body mass index higher than 25 kg/m^2, %	47.1	56.4	ns
Metabolic syndrome, %	50.0	55.1	ns
Haemoglobin, g/dl	11.8 (1.5)	12.5 (1.7)	0.020
Glicated haemoglobin, %	6.7 (0.8)	7.0 (0.8)	ns
Total cholesterol, mg/dL	148.7 (28.0)	162.2 (47.0)	ns
Triglycerides, mg/dL	127.7 (54.5)	140.9 (60.2)	ns
HDL, mg/dL	47.8 (16.3)	48.7 (15.9)	ns
LDL, mg/dL	75.5 (19.9)	85.6 (39.2)	ns
Uric Acid, mg/dL	5.8 (1.4)	6.2 (1.3)	0.044
GFR, mL/min	45.8 (14.9)	48.8 (14.4)	0.004
Albuminuria	10.9 (7.8)	202.6 (271.0)	0.000
Systolic pressure, mmHg	131.1 (15.0)	133.9 (14.6)	ns
Diastolic pressure, mmHg	68.1 (10.2)	73.2 (11.3)	ns
Pulse pressure, mmHg	62.4 (17.2)	62.3 (13.9)	ns

GFR, glomerular filtration rate; NA-DKD, non-albuminuric diabetic kidney disease; A-DKD, albuminuric diabetic kidney disease; ns, not significant.
Values are: mean ± SD, median (interquartile range) or frequencies [n(%)].

nefrologia 2 0 1 6;36(5):503–509

Renal Biopsy in Patients With Diabetes

Urology and Nephrology Center

DNG Diabetes Nephrology Group

48 studies (n = 4876)

Original Article

Renal biopsy in patients with diabetes: a pooled meta-analysis of 48 studies

Marco Fiorentino[1], Davide Bolignano[2,3], Vladimir Tesar[4], Anna Pisano[2], Wim Van Biesen[3], Giovanni Tripepi[2], Graziella D'Arrigo[2] and Loreto Gesualdo[1]on behalf of the ERA-EDTA Immunonephrology Working Group

[1]Department of Emergency and Organ Transplantation, Nephrology, Dialysis and Transplantation Unit, University of Bari, Bari, Italy, [2]CNR-Institute of Clinical Physiology, Reggio Calabria, Italy, [3]European Renal Best Practice (ERBP), University Hospital, Ghent, Belgium and [4]Department of Nephrology, 1st School of Medicine, Charles University, Prague, Czech Republic

NDT Advance Access published May 4, 2016

DKD Progression:
Total Bilirubin

Urology and Nephrology Center

DNG Dakahlia Nephrology Group

Meta-Analysis of Observational Studies in Epidemiology

Medicine®

Total bilirubin level may be a biomarker of nephropathy in type 2 diabetes mellitus
A meta-analysis of observational studies based on MOOSE compliant

Dan Zhang, MD[a], Bo Zhu, MD[b], Wei Zhang, MD[a], Wei Wang, MD[a], Dan Guo, MD[a], Ligang Yang, MD[a], Lu Wang, MD[a,*]

Medicine (Baltimore). 2017 Jan;96(1):e5765.

Corners

1. Why?
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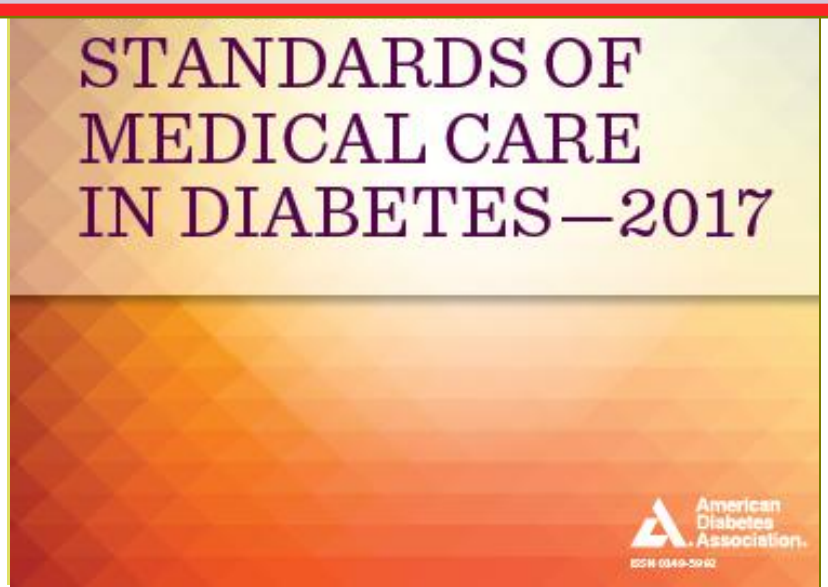
10. Closing

DKD: Management

Urology and Nephrology Center

Treatment

- Optimize glucose control to reduce the risk or slow the progression of diabetic kidney disease. A
- Optimize blood pressure control to reduce the risk or slow the progression of diabetic kidney disease. A



DKD:
Target of Glycemic Control

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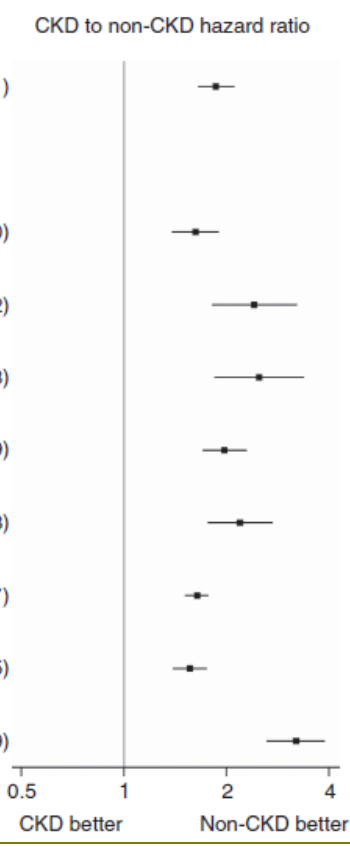
Overall (*N* = 10,142)	Baseline CKD status: No CKD (*N* = 6506)	Baseline CKD status: With CKD (*N* = 3636)

	Non-CKD Rate/year (# events)	CKD Rate/year (# events)	Hazard ratio (95% CI)
Primary outcome	1.60% (497)	3.21% (537)	1.86 (1.65, 2.11)
Secondary outcomes			
Nonfatal MI	1.03% (304)	1.80% (321)	1.62 (1.38, 1.90)
Any stroke	0.25% (81)	0.64% (112)	2.41 (1.81, 3.22)
Nonfatal stroke	0.22% (71)	0.58% (101)	2.49 (1.84, 3.38)
Death any cause	1.03% (330)	2.14% (381)	1.97 (1.70, 2.29)
CVD death	0.22% (142)	1.06% (187)	2.19 (1.76, 2.73)
PO/Rev/NonfatalCHF	4.23% (1228)	7.58% (1131)	1.64 (1.51, 1.77)
Major coronary	2.01% (617)	3.47% (575)	1.56 (1.39, 1.75)
Any CHF	0.48% (153)	1.70% (289)	3.20 (2.62, 3.89)



Kidney International (2015) 87, 649–659

DKD:
Target of Glycemic Control

Urology and Nephrology Center

Dakahlia Nephrology Group

8,494 ADVANCE participants

Table 1—Comparison of NNT over 5 years and 9.9 years to prevent one ESKD event overall

	5-Year follow-up period				9.9-Year follow-up period			
		Annual event rate		NNT to prevent		Annual event rate		NNT to prevent
Population and subgroup	Participants, *N* (%)	Standard, %	Intensive, %	one ESKD event over 5 years	Participants, *N* (%)	Standard, %	Intensive, %	one ESKD over 9.9 years
Overall	11,140 (100)	0.075	0.026	410	11,140 (100)	0.112	0.061	194
No CKD	5,935 (53.3)	0.014	0.007	2,839	5,935 (53.3)	0.046	0.008	259
CKD stages 1 and 2	2,404 (21.6)	0.106	0.035	283	2,404 (21.6)	0.14	0.048	109
CKD stage ≥3	2,256 (20.3)	0.129	0.039	220	2,256 (20.3)	0.232	0.207	393
SBP <140 mmHg	4,704 (42.2)	0.053	0.009	453	4,704 (42.2)	0.103	0.019	120
SBP ≥140 mmHg	6,435 (57.8)	0.091	0.039	384	6,435 (57.8)	0.12	0.092	368

NNT over 5 years = 1/(annual event rate in standard × 5 − annual event rate in intensive × 5). NNT over 10 years = 1/(annual event rate in standard × 10 − annual event rate in intensive × 10). Stage 1 CKD was defined as eGFR ≥90 mL/min/1.73 m^2 and urinary albumin-to-creatinine ratio ≥30 μg/mg; stage 2 CKD was defined as eGFR between 60 and 89 mL/min/1.73 m^2 and urinary albumin-to-creatinine ratio ≥30 μg/mg; stage ≥3 was defined as eGFR <60 mL/min/1.73 m^2 with or without albuminuria. Mild CKD included patients with stages 1 and 2 and moderate CKD included patients with stage 3 CKD. eGFR is calculated using the EPI-CKD formula.

Diabetes Care May 2016;39:694–700

Corners

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DKD:
HbA1c or Alternative Test?

Urology and Nephrology Center

DNG Dakahlia Nephrology Group

Chapter 2.2. Are there better alternatives than HbA1c to estimate glycaemic control in patients with diabetes and CKD stage 3b or higher (eGFR <45 mL/min/1.73 m^2)?

Statements

2.2.1 We recommend the use of HbA1C as a routine reference to assess longer term glycaemic control in patients with CKD stage 3b or higher (eGFR <45 mL/min/1.73 m^2) (1C).

Nephrol Dial Transplant (2015) 30: ii1–ii142
doi: 10.1093/ndt/gfv100

ndt Nephrology Dialysis Transplantation

Clinical Practice Guideline

Clinical Practice Guideline on management of patients with diabetes and chronic kidney disease stage 3b or higher (eGFR <45 mL/min)

Nephrol Dial Transplant (May 2015) 30: ii1–ii142

Corners

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DKD:
Management of DM

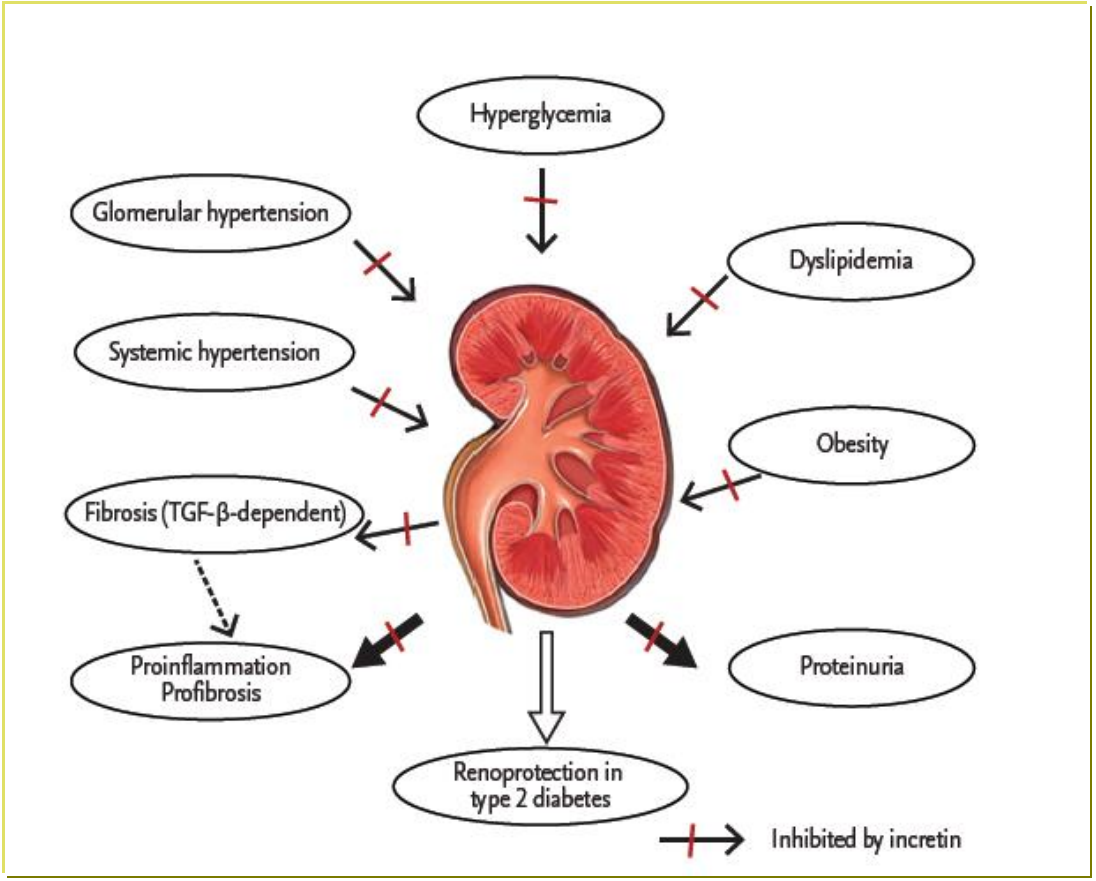
Urology and Nephrology Center

Class and Medication	Dose Adjustment Based on eGFR
Biguanide	
Metformin	USA prescribing information: contraindication for men with serum creatinine ⩾1.5 mg/dL and women with serum creatinine ⩾1.4 mg/dL UK guideline allows metformin in patients with eGFR >30 mL/min/1.73 m^2 KDIGO recommends metformin in patients with eGFR >45 mL/min/1.73 m^2

Insulin

CLINICS 2016;71(1):47-53

DKD:
Incretin Favorable Renal outcome



Korean J Intern Med 2017;32:11-25

Liraglutide in DKD-ESRD

Urology and Nephrology Center

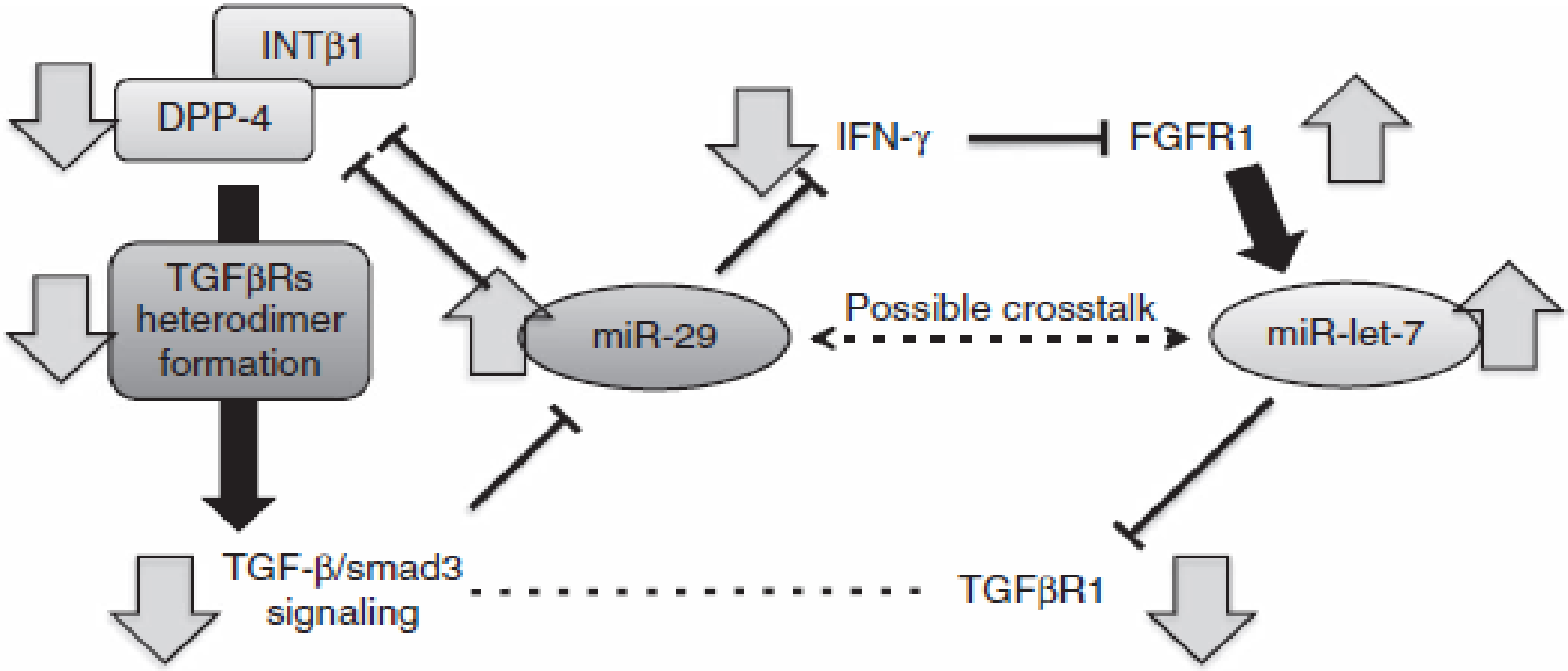
Dakahlia Nephrology Group

Safety and Efficacy of Liraglutide in Patients With Type 2 Diabetes and End-Stage Renal Disease: An Investigator-Initiated, Placebo-Controlled, Double-Blind, Parallel-Group, Randomized Trial

Thomas Idorn,[1] Filip K. Knop,[2,3] Morten B. Jørgensen,[1] Tonny Jensen,[4] Marsela Resuli,[5] Pernille M. Hansen,[5] Karl B. Christensen,[6] Jens J. Holst,[3] Mads Hornum,[1] and Bo Feldt-Rasmussen[1]

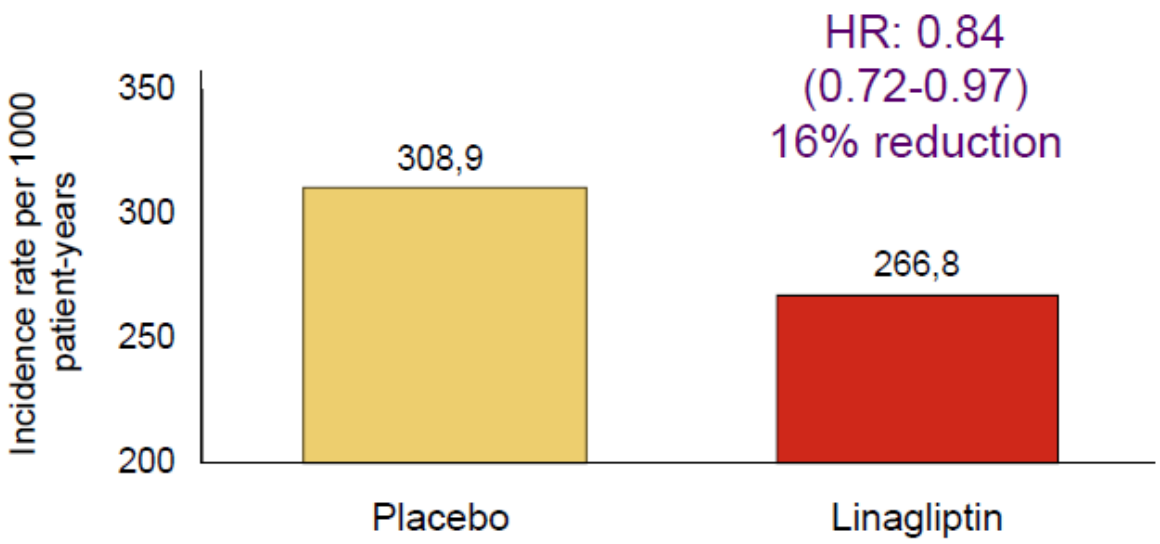
Diabetes Care 2016;39:206–213

DPP4 Nephroprotection



Curr Opin Nephrol Hypertens 2017, 26:56–66

DPP-4 Inhibitors:
Nephroprotection

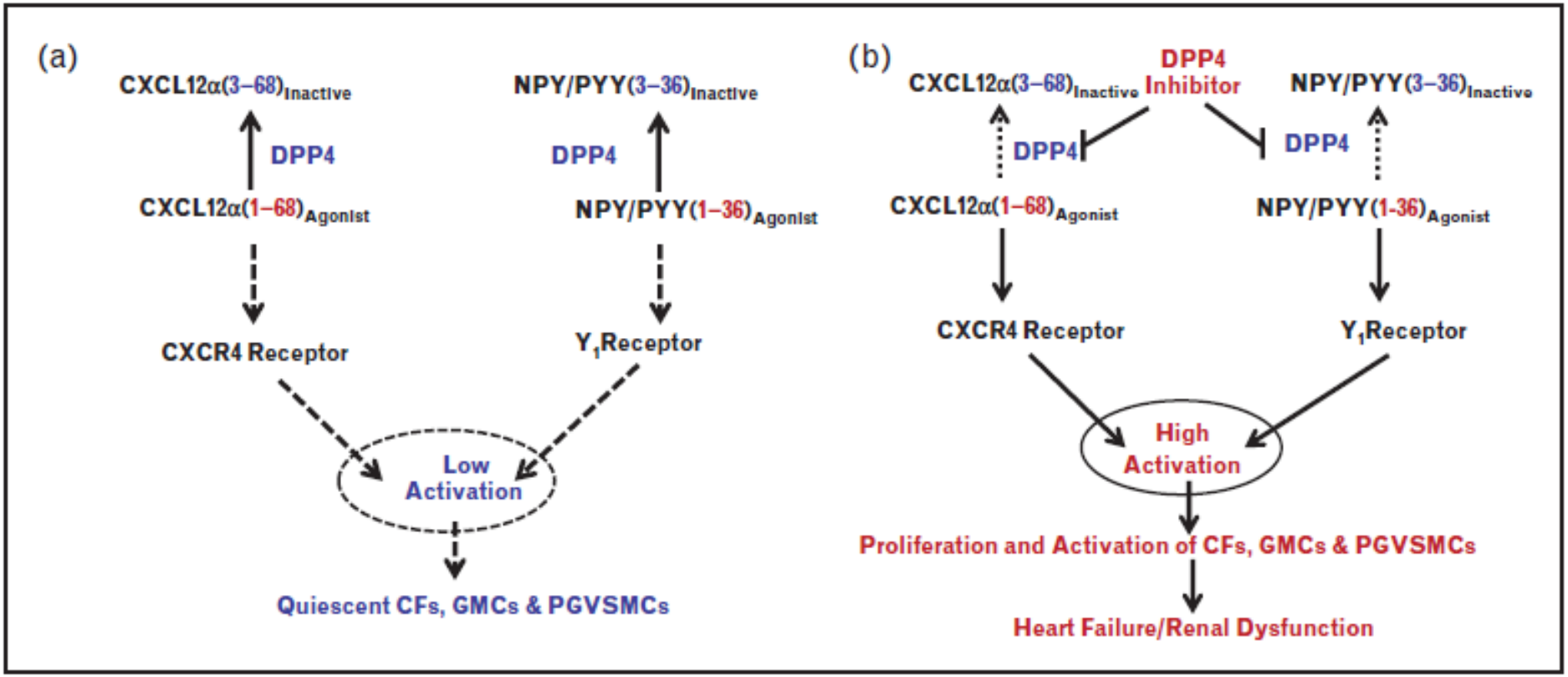


Renal events	306	448
Time at risk, years	991	1679
Patients, n	1961	3505

Microalbuminuria, macroalbuminuria, CKD (sCR >2.8 mg/dl), worsening of CKD (loss eGFR >50% of baseline, acute renal failure, death from any cause

Nutrition, Metabolism & Cardiovascular Diseases (2016) 26, 361-373

DPP4 Nephroprotection



Curr Opin Nephrol Hypertens. 2016 Nov 24. [Epub ahead of print]

SGLT2 Inhibitors: An update

Urology and Nephrology Center

Dakahlia Nephrology Group

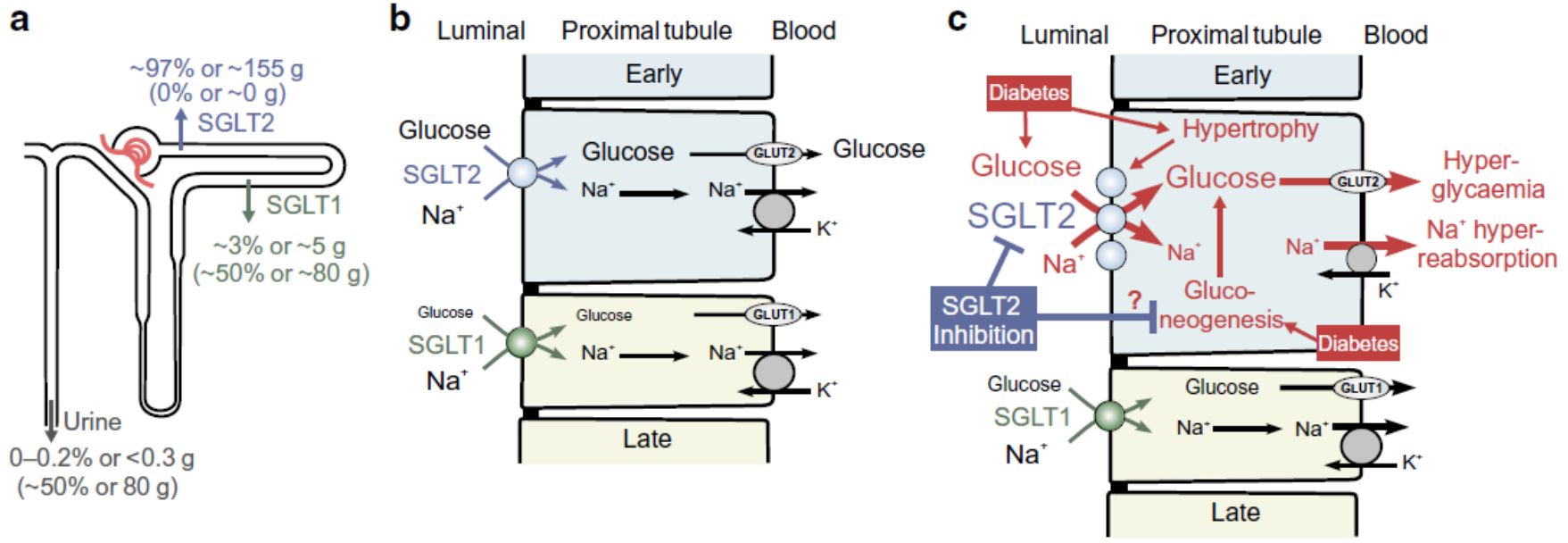
List of current sodium-glucose co-transporter-2 inhibitors

Generic name	Brand name	Available doses (mg)	Administration
Canagliflozin[a]	Invokana	100 and 300	qam before first meal
Dapagliflozin[a]	Farxiga	5 and 10	qam
Empagliflozin[a]	Jardiance	10 and 25	qam
Canagliflozin/metformin[a]	Invokamet	50/500 and 50/1000, 150/500 and 150/1000	BID with meals, max dose 300 mg/2000 mg
Dapagliflozin/metformin[a]	Xigduo XR	5/500 and 5/1000, 10/500 and 10/1000	qam with food, max dose 10 mg/2000 mg
Empagliflozin/metformin[a]	Synjardy	5/500 and 5/1000, 12.5/500 and 12.5/1000	BID with meals, max dose 25 mg/2000 mg
Empagliflozin/linagliptin[a]	Glyxambi	10/5 and 25/5	qam
Ipragliflozin[b]	Suglat	25 and 50	qam, max dose 100 mg
Tofogliflozin[b, c]	Apleway, Deberza	20	qam
Luseogliflozin[c]			
Remogliflozin Etabonate[c]			
Ertugliflozin[c]			
Sotagliflozin[c]			

[a]FDA and EMA approved.
[b]Ministry of Health, Labour and Welfare approved in Japan.
[c]Currently in clinical trials or seeking market approval; qam taken once daily in the morning, BID twice daily.

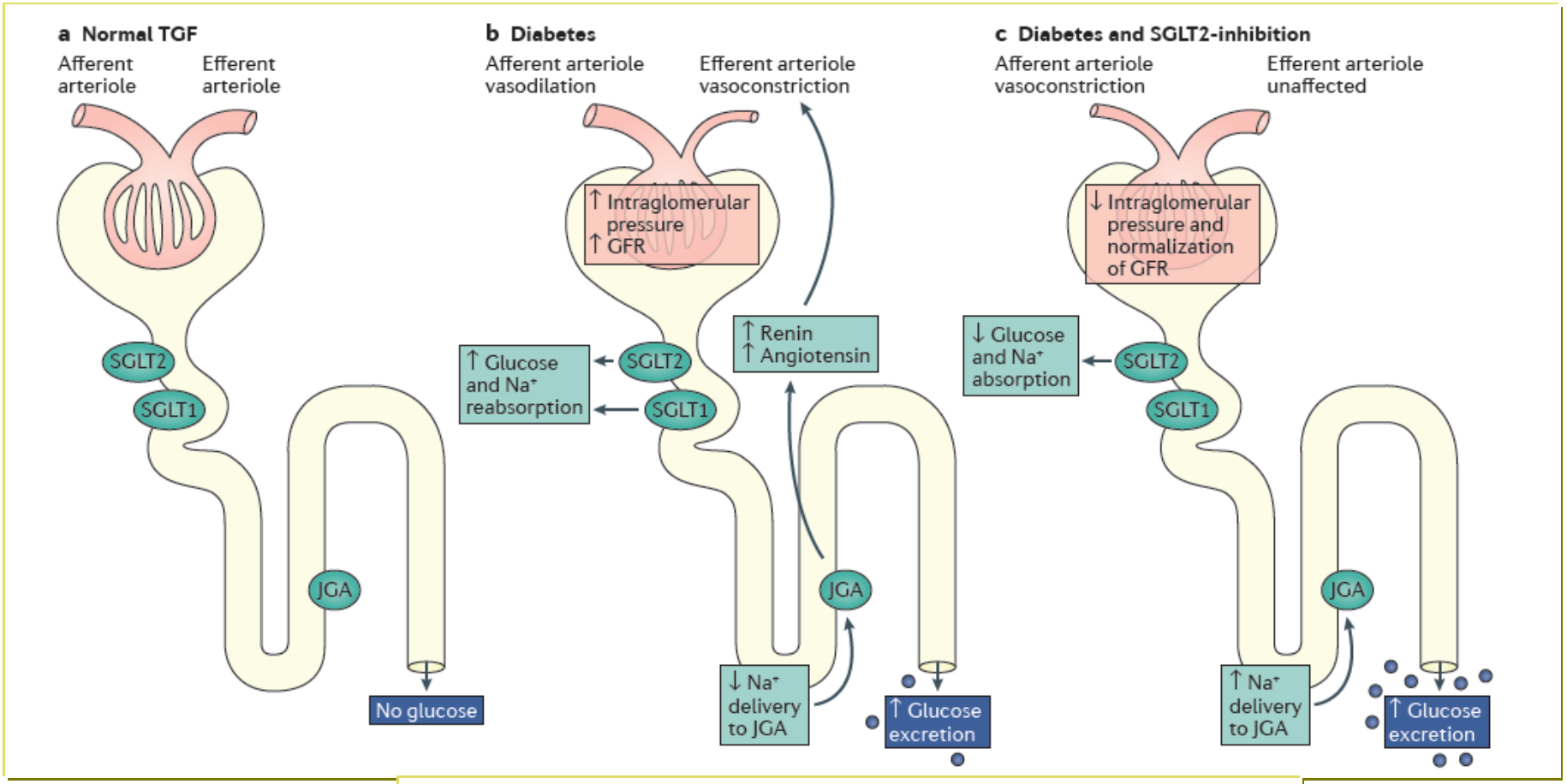
Curr Opin Endocrinol Diabetes Obes. 2017 Feb;24(1):73-79.

SGLT2 Inhibitors: Pleiotropic Effects



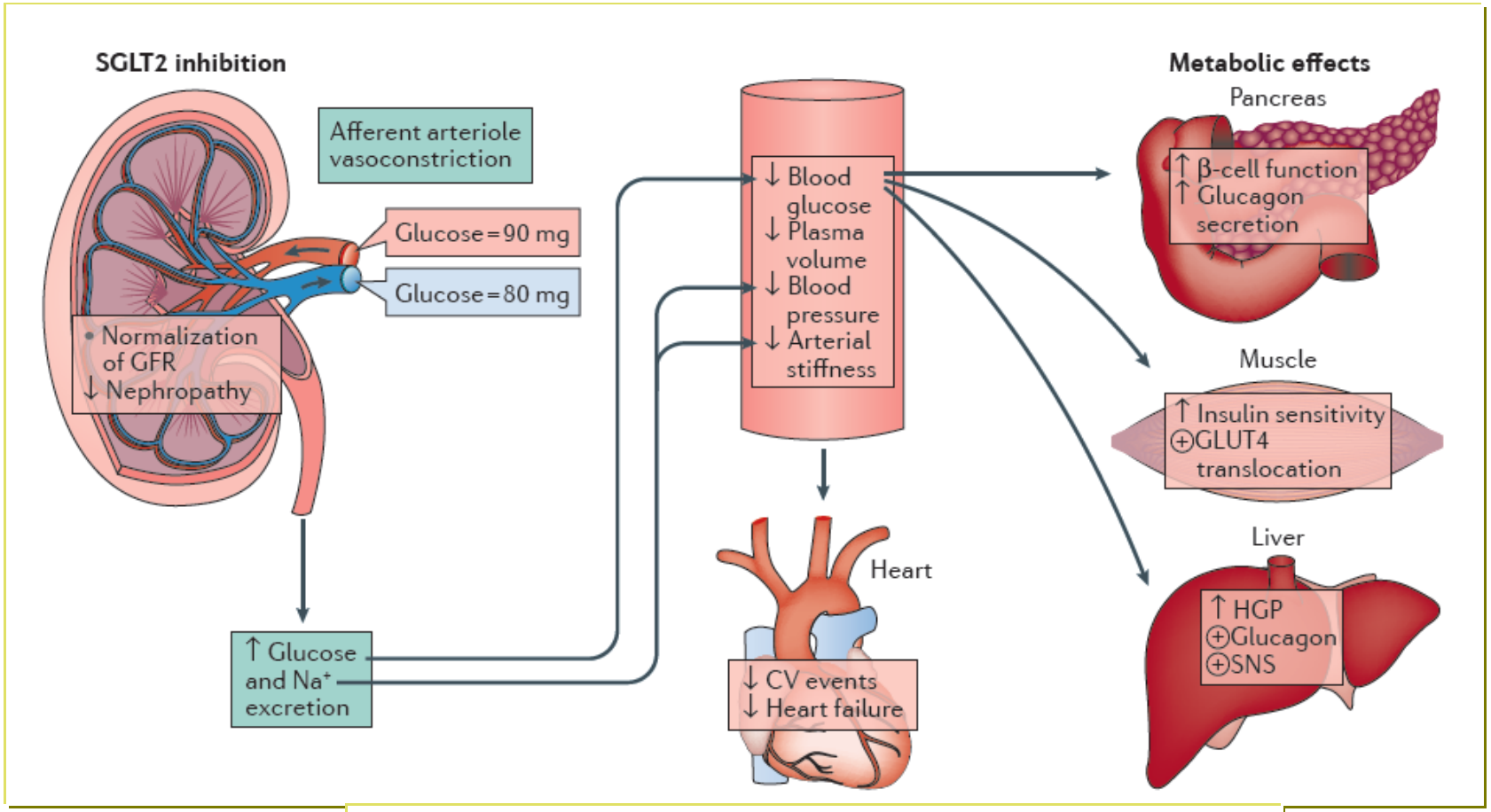
Diabetologia (2017) 60:215–225

SGLT2 Inhibitors:
Effects on Renal TGF



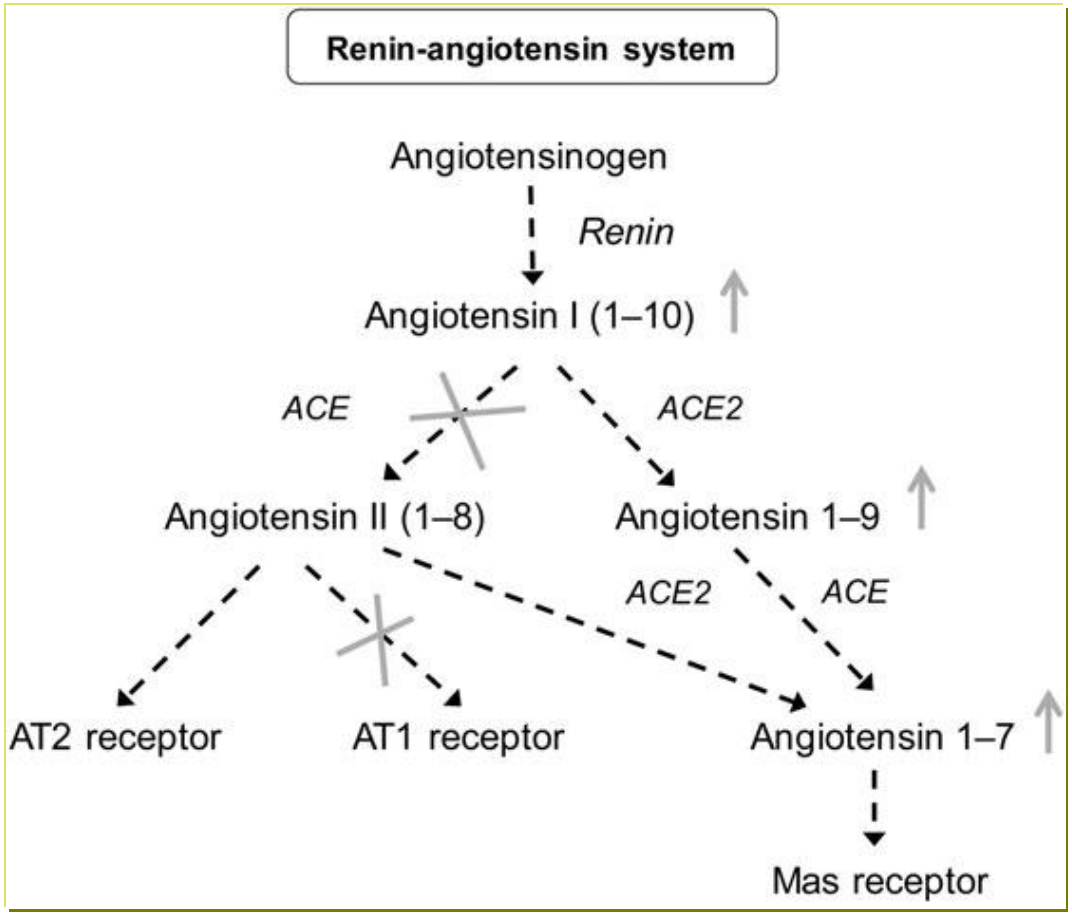
NATURE REVIEWS | NEPHROLOGY VOLUME 13 | JANUARY 2017

SGLT2 Inhibitors:
Cardiovascular and Renal Effects



NATURE REVIEWS | NEPHROLOGY VOLUME 13 | JANUARY 2017

SGLT2 Inhibitors: Renoprotection



Nephrol Dial Transplant (July 2016) 31: 1036–1043

Antihyperglycemic Agents:
KgA1C paradox

Urology and Nephrology Center

Dakahlia Nephrology Group

G Model
DSX 689 No. of Pages 10

ARTICLE IN PRESS

Diabetes & Metabolic Syndrome: Clinical Research & Reviews xxx (2016) xxx–xxx

Contents lists available at ScienceDirect

Diabetes & Metabolic Syndrome: Clinical Research & Reviews

journal homepage: www.elsevier.com/locate/dsx

Review

Resolving the KgA1c paradox in the management of type 2 diabetes mellitus

Jaime Davidson[a], Sanjay Kalra[b,*], Vikram Singh[c], Mayuresh Fegade[c], Gursimran Singh[c], Amey Mane[c]

[a] Touchstone Diabetes Center, University of Texas Southwestern Medical Center, Dallas, TX, USA
[b] Bharti Research Institute of Diabetes & Endocrinology (BRIDE), Karnal, Haryana, India
[c] Janssen, Pharmaceutical Companies of Johnson & Johnson, Mumbai, Maharashtra, India

SGLT2 Inhibitor:
Retarding The Progression of CKD

Urology and Nephrology Center

Dakahlia Nephrology Group

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

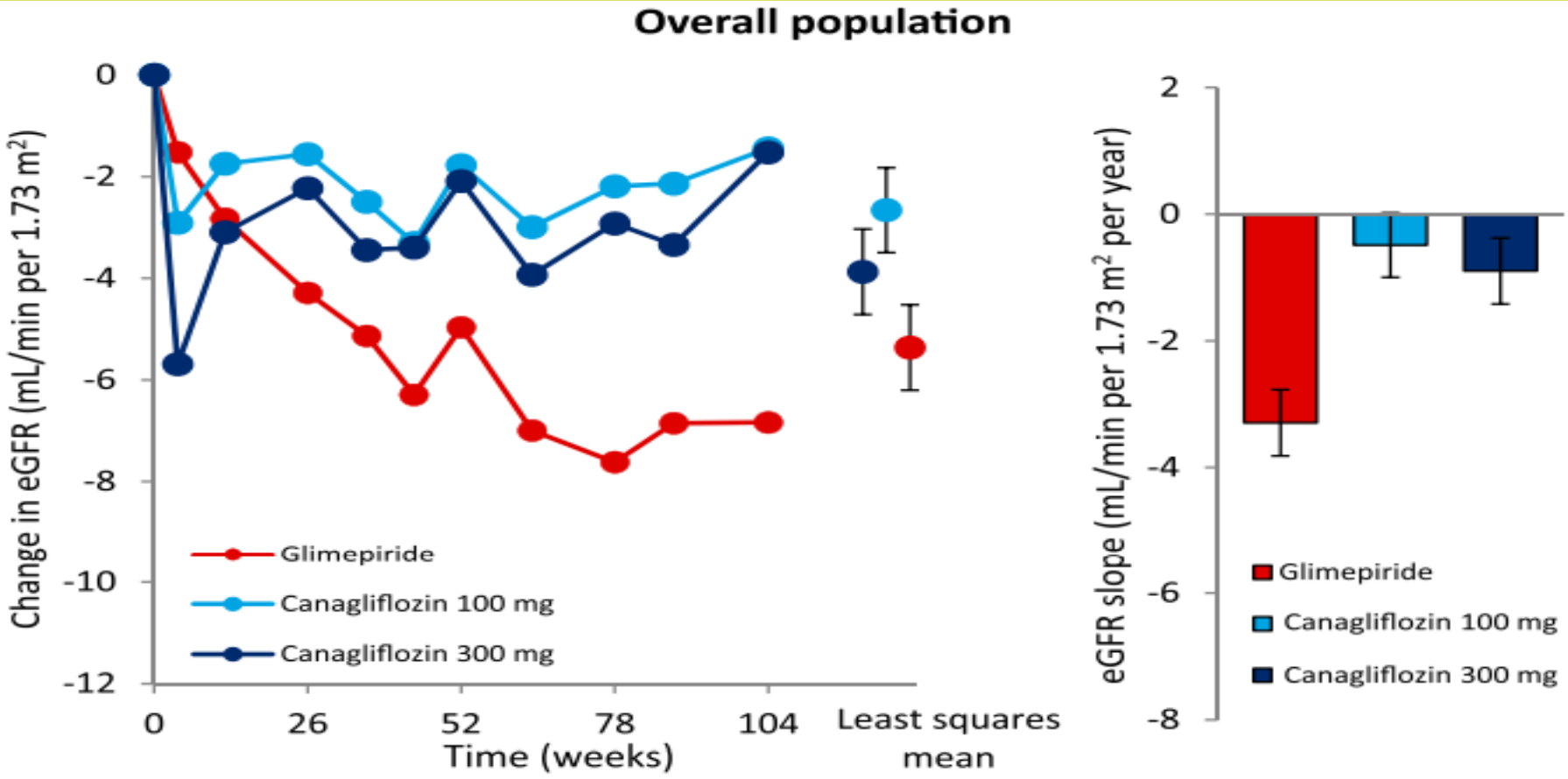
Empagliflozin and Progression of Kidney Disease in Type 2 Diabetes

Christoph Wanner, M.D., Silvio E. Inzucchi, M.D., John M. Lachin, Sc.D., David Fitchett, M.D., Maximilian von Eynatten, M.D., Michaela Mattheus, Dipl. Biomath., Odd Erik Johansen, M.D., Ph.D., Hans J. Woerle, M.D., Uli C. Broedl, M.D., and Bernard Zinman, M.D.,

EMPA-REG OUTCOME trial

N Engl J Med. 2016 Jun 14. [Epub ahead of print]

SGLT2 Inhibitors (Canagliflozin): Renoprotection



J Am Soc Nephrol 28: 368–375, 2017

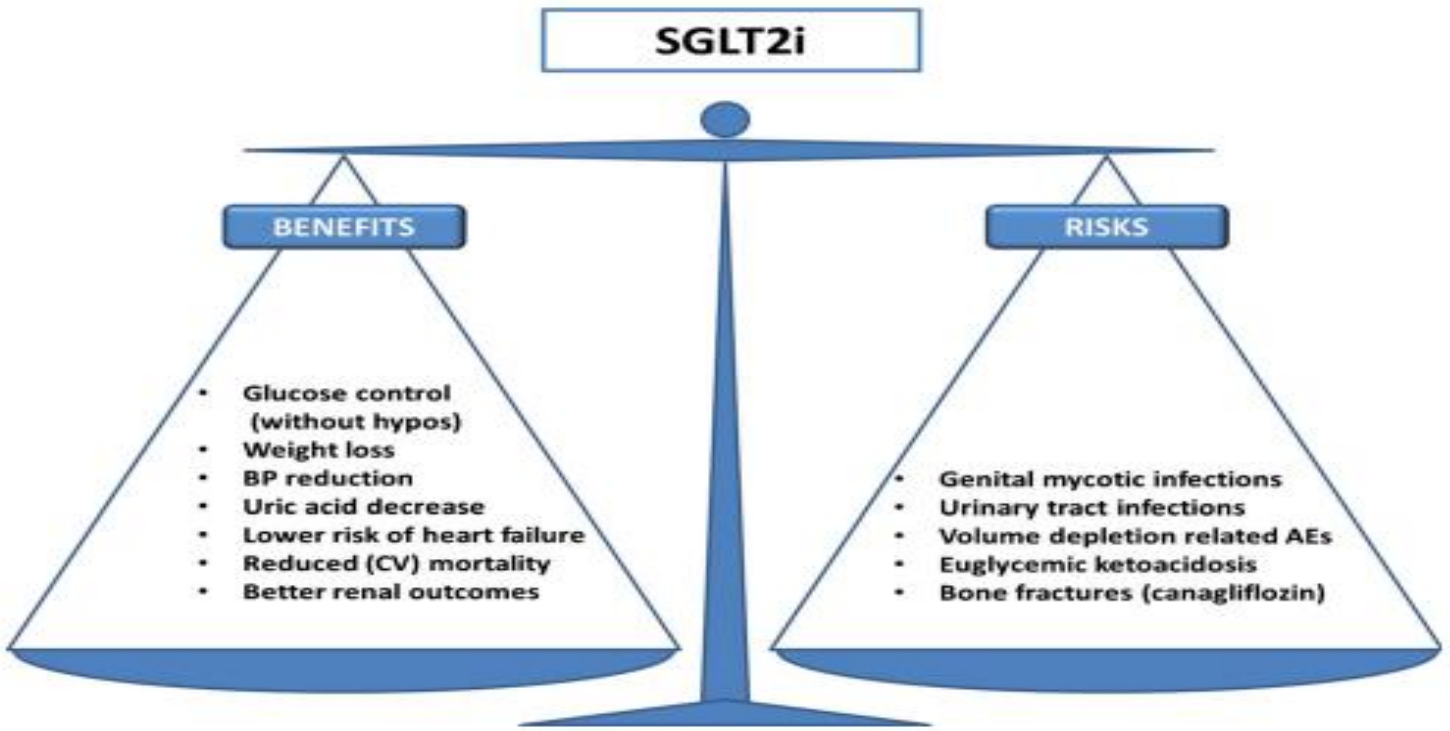
SGLT2 Inhibitors: Benefits/ Risk

Urology and Nephrology Center

Dakahlia Nephrology Group

Curr Diab Rep (2016) 16: 92
DOI 10.1007/s11892-016-0789-4

CrossMark

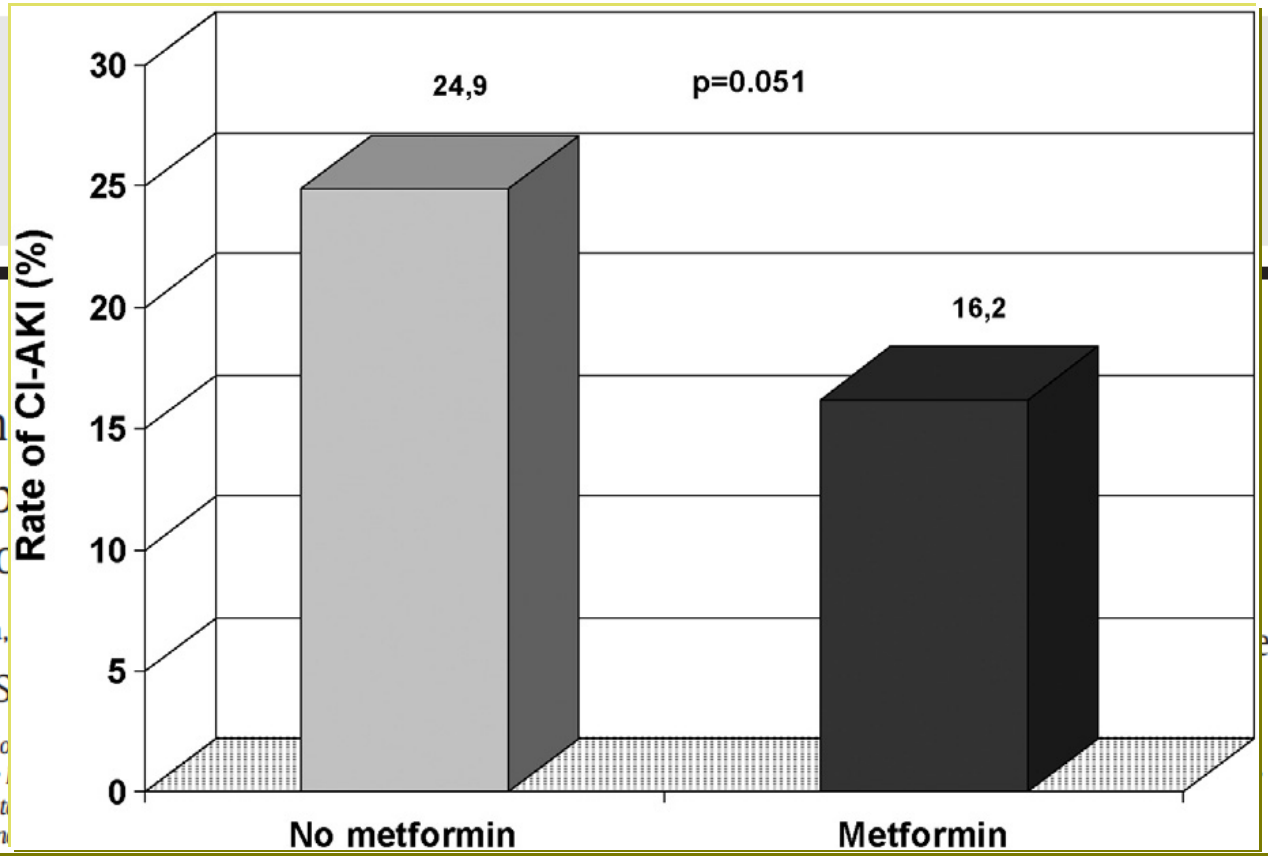


SGLT2 Inhibitors: Reported AKI

Drug name	Reports, n	EBGM (EB05-EB95)
Monotherapy		
Canagliflozin*	125	2.8 (2.4-3.3)
Dapagliflozin*	50	2.3 (1.8- 2.8)
Empagliflozin*	15	2.5 (1.6-3.8)
Combination therapy		
Canagliflozin plus metformin	3	1.5 (0.6-3.4)
Dapagliflozin plus metformin XR*	6	3.9 (2.0-7.4)
Empagliflozin plus linagliptin	2	1.3 (0.4-3.2)

Diabetes Obes Metab. 2017, Accepted

Metformin and CI-AKI



ELSEVIER

Metformin an
treated with p
elevation myc

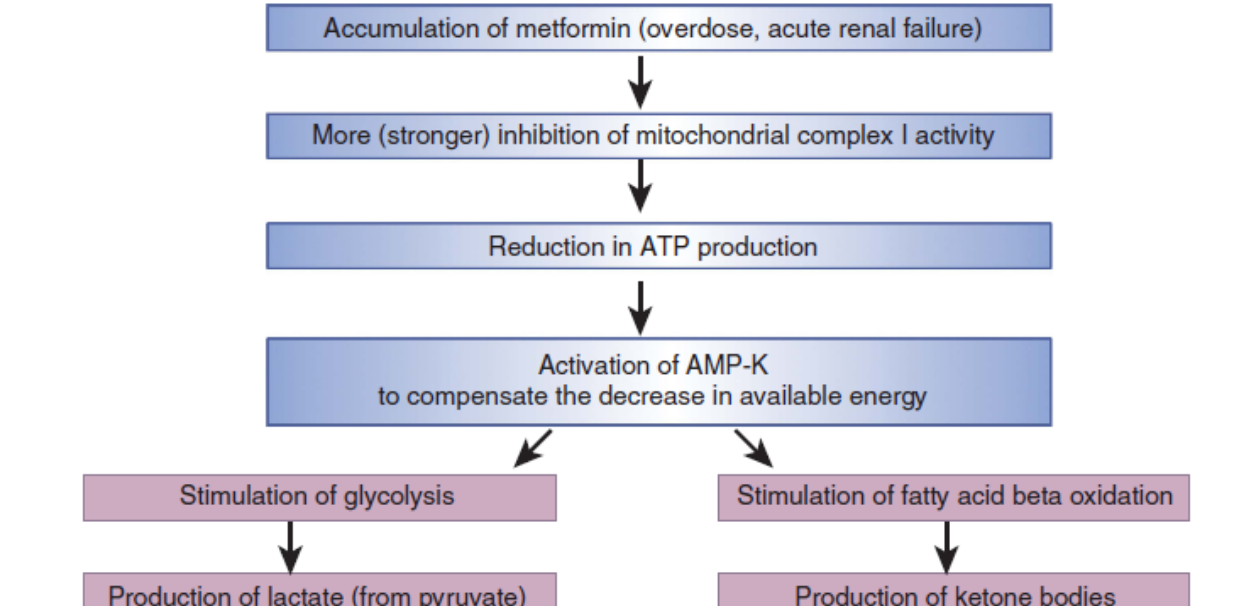
Marianne Zeller [a],
Philippe Gabriel S

[a] Laboratoire de Physiopatholo
[b] Diabétologie Endocrinologie
[c] Cardiologie, DHU FIRE, Hôpit
[d] Cardiologie, CHU Dijon, Fran

eldman [c],

International Journal of Cardiology 220 (2016) 137–142

Metformin:
Lactic Acidosis



MILA or MALA

Kidney International (2015) 87, 308–322

Corners

1. Why?
2. How?
3. Presentations
4. Target glycemic control
5. HbA1c
6. Antihyperglycemics
7. **Antihypertensive therapy**
8. Novel Therapy
9. RRT
10. Closing

Hypertension Guidelines: Goal and Target

Urology and Nephrology Center

DNG Dakahlia Nephrology Group

HYPERTENSION

When should we treat hypertension in patients with diabetes?

Sverre E. Kjeldsen and Ingrid Os

BP-lowering therapy and diabetes

Baseline systolic BP	Effects of BP-lowering treatment
>150 mmHg	↓All-cause mortality
	↓Cardiovascular mortality
	↓Myocardial infarction
	↓End-stage renal disease

NATURE REVIEWS | **CARDIOLOGY 2016**

Brunström, M. & Carlberg, B. Effect of antihypertensive treatment at different blood pressure levels in patients with diabetes mellitus: systematic review and meta-analyses. *BMJ* **352**, i717 (2016).

Hypertension Guidelines: Goal and Target

Urology and Nephrology Center

Dakahlia Nephrology Group

ACP American College of Physicians

Annals of Internal Medicine®

CLINICAL GUIDELINES | 17 JANUARY 2017

ACP American College of Physicians℠
Leading Internal Medicine, Improving Lives

CLINICAL GUIDELINE

Pharmacologic Treatment of Hypertension in Adults Aged 60 Years or Older to Higher Versus Lower Blood Pressure Targets: A Clinical Practice Guideline From the American College of Physicians and the American Academy of Family Physicians

Amir Qaseem, MD, PhD, MHA; Timothy J. Wilt, MD, MPH; Robert Rich, MD; Linda L. Humphrey, MD, MPH; Jennifer Frost, MD; and Mary Ann Forciea, MD; for the Clinical Guidelines Committee of the American College of Physicians and the Commission on Health of the Public and Science of the American Academy of Family Physicians*

Hypertension Guidelines: Goal and Target

Urology and Nephrology Center

Patients with hypertension and diabetes	Grade of recommendation	Level of evidence
a. Antihypertensive therapy is strongly recommended in patients with diabetes and systolic blood pressure ≥140 mmHg.	Strong	I
b. In patients with diabetes and hypertension, any of the first-line antihypertensive drugs that effectively lower blood pressure are recommended.	Strong	I
c. In patients with diabetes and hypertension, a blood pressure target of <140/90 mmHg is recommended.	Strong	I
d. A systolic blood pressure target of <120 mmHg may be considered for patients with diabetes in whom prevention of stroke prioritised.	Weak	–
e. In patients with diabetes where treatment is being targeted to <120 mmHg systolic, close follow-up of patients is recommended to identify treatment related adverse effects including hypotension, syncope, electrolyte abnormalities and acute kidney injury.	Strong	–

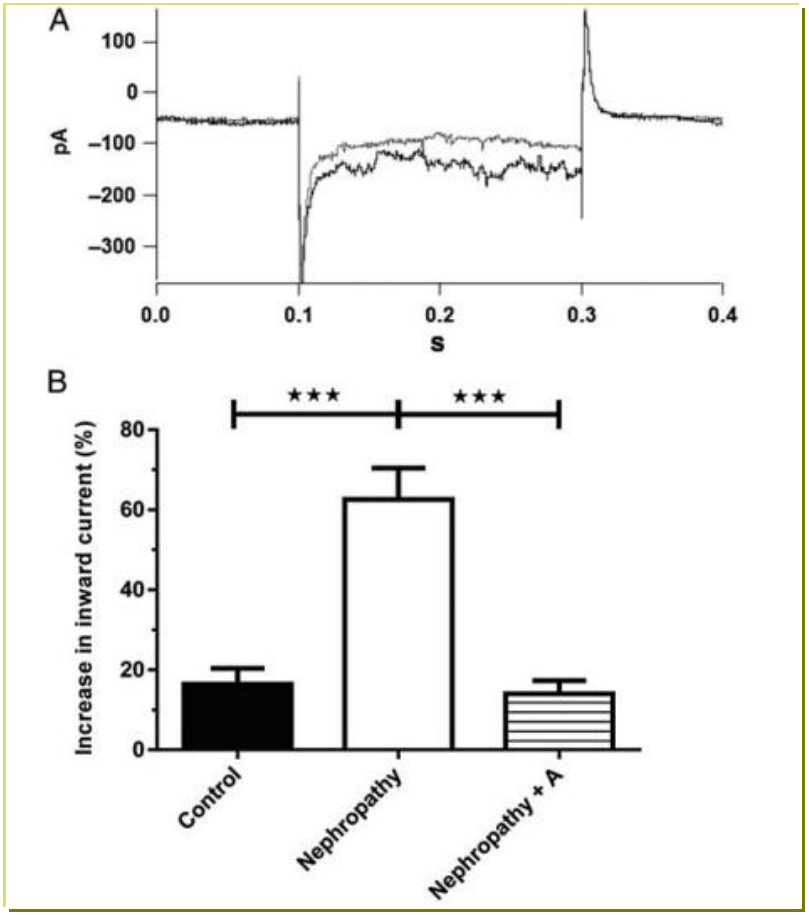
Heart Foundation

2016 National Heart Foundation of Australia

Guideline for the diagnosis and management of hypertension in adults 2016

DKD:

Proteinuria Induced hypertension



Nephrol Dial Transplant (2015) 30: 781–789

Corners

1. Why?
2. How?
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4. Target glycemic control
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6. Antihyperglycemics
7. Antihypertensive therapy
8. **Novel Therapy**
9. RRT
10. Closing

DKD:
Use of Novel MRA

Urology and Nephrology Center

DNG Dakahlia Nephrology Group

Available online at www.sciencedirect.com

Metabolism

www.metabolismjournal.com

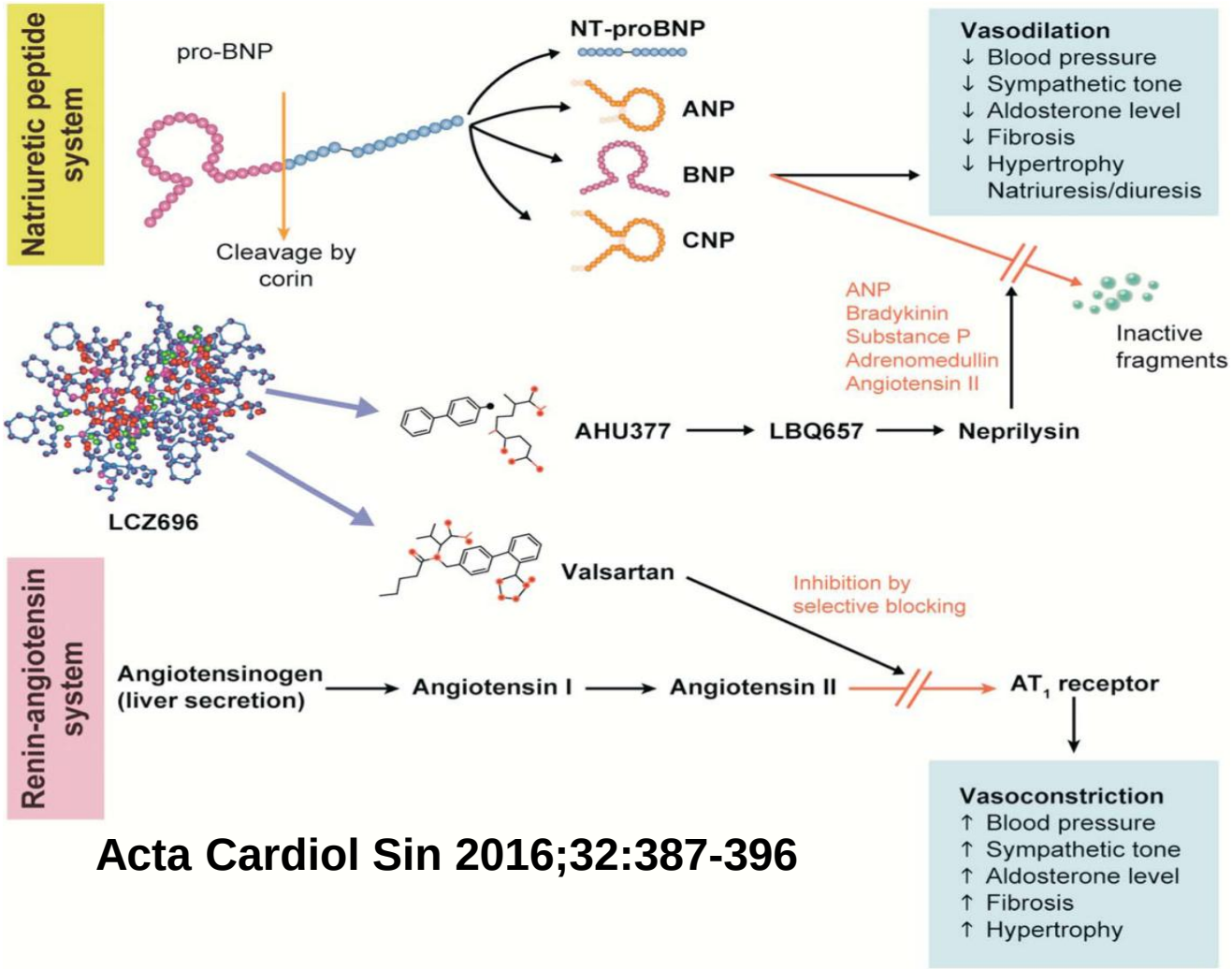
The novel mineralocorticoid receptor antagonist finerenone in diabetic kidney disease: Progress and challenges

Pingping Yang[a,b,1], *Tianlun Huang*[b,1], *Gaosi Xu*[b,*]

[a] *Medical Center of the Graduate School, Nanchang University, China*
[b] *Department of Nephrology, the Second Affiliated Hospital of Nanchang University, China*

METABOLISMCLINICALANDEXPERIMENTAL65(2016)1342–1349

ARNI
(Valsartan/Sacubitril)



Acta Cardiol Sin 2016;32:387-396

ARNI
(Valsartan/Sacubitril)

Urology and Nephrology Center

DNG Dakahlia Nephrology Group

Improved Insulin Sensitivity With Angiotensin Receptor Neprilysin Inhibition in Individuals With Obesity and Hypertension

J Jordan[1], R Stinkens[2], T Jax[3], S Engeli[1], EE Blaak[2], M May[1], B Havekes[4], C Schindler[1], D Albrecht[5], P Pal[6], T Heise[3], GH Goossens[2] and TH Langenickel[5]

Clin Pharmacol Ther. 2017 Feb;101(2):254-263

Probiotic Supplementation

Urology and Nephrology Center

www.kidney-international.org

clinical investigation

Probiotic supplementation in diabetic hemodialysis patients has beneficial metabolic effects

Alireza Soleimani[1], Malihe Zarrati Mojarrad[2], Fereshteh Bahmani[2], Mohsen Taghizadeh[2], Mohammad Ramezani[2], Maryam Tajabadi-Ebrahimi[3], Parvaneh Jafari[4], Ahmad Esmaillzadeh[5,6,7] and Zatollah Asemi[2]

[1]Department of Internal Medicine, Kashan University of Medical Sciences, Kashan, Iran; [2]Research Center for Biochemistry and Nutrition in Metabolic Diseases, Kashan University of Medical Sciences, Kashan, I.R. Iran; [3]Faculty Member of Science Department, Science Faculty, Islamic Azad University, Tehran Central Branch, Tehran, Iran; [4]Department of Microbiology, Science Faculty, Islamic Azad University, Arak Branch, Arak, Iran; [5]Food Security Research Center, Isfahan University of Medical Sciences, Isfahan, Iran; [6]Department of Community Nutrition, School of Nutrition and Food Science, Isfahan University of Medical Sciences, Isfahan, Iran; and [7]Department of Community Nutrition, School of Nutritional Sciences and Dietetics, Tehran University of Medical Sciences, Tehran, Iran

Kidney International (February 2017) 91, 435–442

DKD:
Effects of Vitamin D

www.nephropathol.com DOI: 10.15171/jnp.2017.03 J Nephropathol. 2017;6(1):10-14

Journal of Nephropathology

Effect of vitamin D on proteinuria in type 2 diabetic patients

Ali Momeni[1], Mahmood Mirhosseini[1], Mohsen Kabiri[1*], Soleiman Kheiri[2]

[1]Department of Internal Medicine, Shahrekord University of Medical Sciences, Shahrekord, Iran
[2]Social Health Determinants Research Center, Shahrekord University of Medical Sciences, Shahrekord, Iran

J Nephropathol. 2017;6(1):10-14

Corners

1. Why?
2. How?
3. Presentations
4. Target glycemic control
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6. Antihyperglycemics
7. Antihypertensive therapy
8. Novel Therapy
9. **RRT**
10. Closing

RRT in Diabetes: Timing of Dialysis

Urology and Nephrology Center

DNG Dakahlia Nephrology Group

Timing of start of dialysis in diabetes mellitus patients: a systematic literature review*

Hakan Nacak[1], Davide Bolignano[2,3], Merel Van Diepen[1], Friedo Dekker[1] and Wim Van Biesen[2,4]

[1]Department of Clinical Epidemiology, Leiden University Medical Center, Leiden, The Netherlands, [2]European Renal Best Practice (ERBP), University Hospital Ghent, Ghent, Belgium, [3]CNR-Institute of Clinical Physiology, Reggio Calabria, Italy and [4]Renal Division, Ghent University Hospital, Ghent, Belgium

Nephrol Dial Transplant (2016) 31: 306–316

DKD:
Clinical Practice Guidelines

Urology and Nephrology Center

DNG Dakahlia Nephrology Group

7. CHAPTER 1: ISSUES RELATED TO RENAL REPLACEMENT MODALITY SELECTION IN PATIENTS WITH DIABETES AND END-STAGE RENAL DISEASE

Chapter 1.1. Should patients with diabetes and CKD stage 5 start with peritoneal dialysis or haemodialysis as a first modality?

Statements

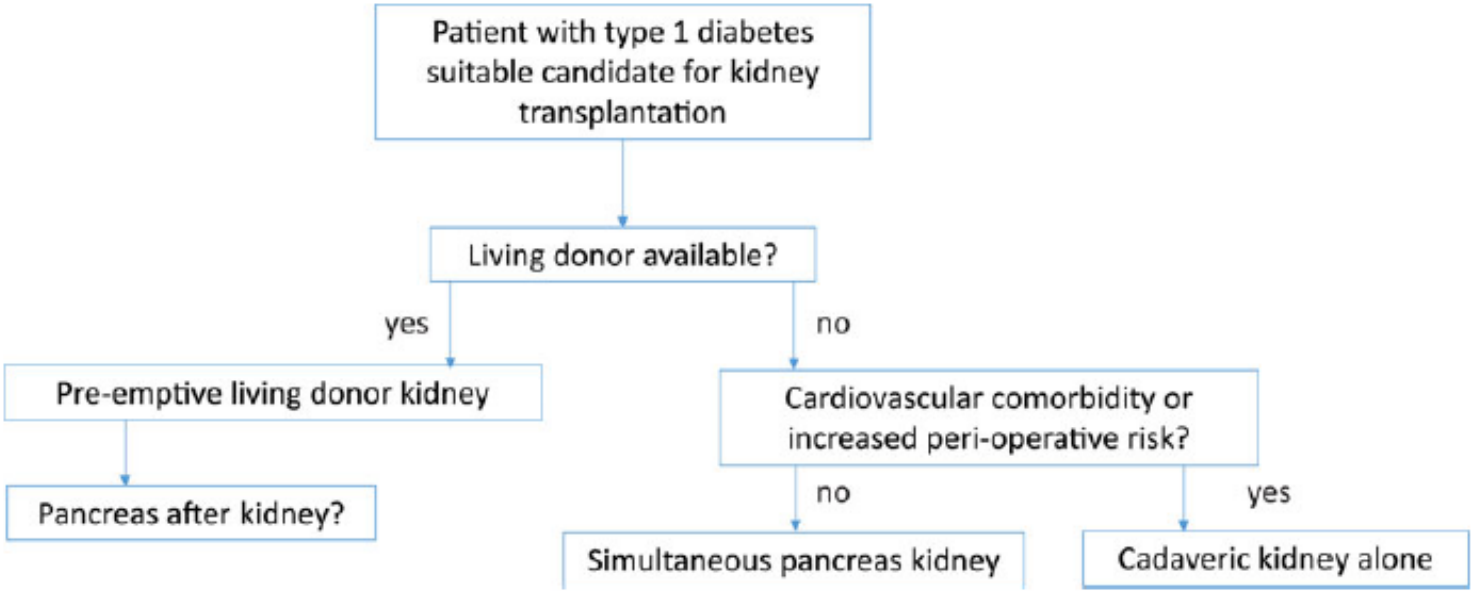
1.1.3 In patients opting to start haemodialysis (HD), we suggest prefering high flux over low flux when this is available (2C).

1.1.4 We suggest diabetes has no influence on the choice between HD or haemodiafiltration (HDF) (2B).

Nephrol Dial Transplant (May 2015) 30: ii1–ii142

DKD:
Clinical Practice Guidelines

Chapter 1.4 Is there a benefit to undergoing renal transplantation for patients with diabetes and CKD stage 5?



Nephrol Dial Transplant (May 2015) 30: ii1–ii142

Clinical Practice: Guidelines

Urology and Nephrology Center

DNG Dakahlia Nephrology Group

Chapter 1.4 Is there a benefit to undergoing renal transplantation for patients with diabetes and CKD stage 5?

Statements only for patients with type 2 diabetes and CKD stage 5

1.4.5 We recommend against pancreas or simultaneous kidney pancreas transplantation (**1D**).

Nephrol Dial Transplant (May 2015) 30: ii1–ii142

Immunosuppression and Antidiabetic:
Drug-Drug Interactions

Urology and Nephrology Center

Dakahlia Nephrology Group

ARTICLE IN PRESS

Transplantation Reviews xxx (2016) xxx–xxx

Contents lists available at ScienceDirect

Transplantation Reviews

journal homepage: www.elsevier.com/locate/trre

Drug–drug interactions between immunosuppressants and antidiabetic drugs in the treatment of post-transplant diabetes mellitus☆

Thomas Vanhove [a,*], Quinten Remijsen [b], Dirk Kuypers [a], Pieter Gillard [c]

[a] Department of Microbiology and Immunology, KU Leuven - University of Leuven, and Department of Nephrology and Renal Transplantation, University Hospitals Leuven, Leuven, Belgium
[b] Department of Medical Affairs, AstraZeneca BeLux, Uccle, Belgium
[c] Laboratory and Clinic of Experimental Medicine and Endocrinology, KU Leuven - University of Leuven, and Department of Endocrinology, University Hospital Leuven, Leuven, Belgium

Post-transplant Diabetes: Impact on Graft Survival

Urology and Nephrology Center

Dakahlia Nephrology Group

Cox proportional hazard regression

Model A. Observational time starting at time of renal transplantation. Surviving patients censored at January 1, 2015

			Unadjusted			Multivariable adjusted		
Number of	Patients	Events	HR	95% CI	*P*	HR	95% CI	*P*
No diabetes	2250	694	1.0			1.0		
Diabetes before transplantation	499	199	1.37	(1.17-1.60)	<0.001	1.40	(1.18-1.60)	0.001

Model B. Observational time starting at 10 weeks after renal transplantation. Surviving patients censored at 1st January 2015

			Unadjusted			Multivariable adjusted		
Number of	Patients	Events	HR	95% CI	*P*	HR	95% CI	*P*
Normal glucose tolerance	1265	328	1.0			1.0		
Diabetes before transplantation	478	173	1.67	(1.39-2.01)	<0.001	1.39	(1.11-1.76)	0.01
Posttransplantation diabetes	165	62	1.82	(1.38-2.38)	<0.001	1.44	(1.11-1.87)	0.01
Impaired glucose tolerance	202	54	1.16	(0.87-1.55)	0.32	0.98	(0.69-1.28)	0.61

Model C. Observational time starting at 1 year after renal transplantation. Surviving patients censored at January 1, 2015

			Unadjusted			Multivariable adjusted		
Number of	Patients	Events	HR	95% CI	*P*	HR	95% CI	*P*
No diabetes	1368	334	1.0			1.0		
Diabetes before transplantation	444	154	1.63	(1.34-1.97)	<0.001	1.56	(1.27-1.91)	<0.001
Posttransplantation diabetes	219	78	1.82	(1.43-2.33)	<0.001	1.46	(1.13-1.88)	0.003

Transplantation 2017; in press

Post-transplant Diabetes: Impact on DC Graft Survival

Urology and Nephrology Center

Dakahlia Nephrology Group

Cox proportional hazard regression

Model A. Observational time starting at time of renal transplantation. Surviving patients censored at January 1, 2015

			Unadjusted			Multivariable adjusted		
Number of	Patients	Events	HR	95% CI	*P*	HR	95% CI	*P*
No diabetes	2250	277	1.0			1.0		
Diabetes before transplantation	499	76	1.37	(1.17-1.60)	<0.001	1.39	(1.06-1.84)	0.02

Model B. Observational time starting at 10 weeks after renal transplantation. Surviving patients censored at January 1, 2015

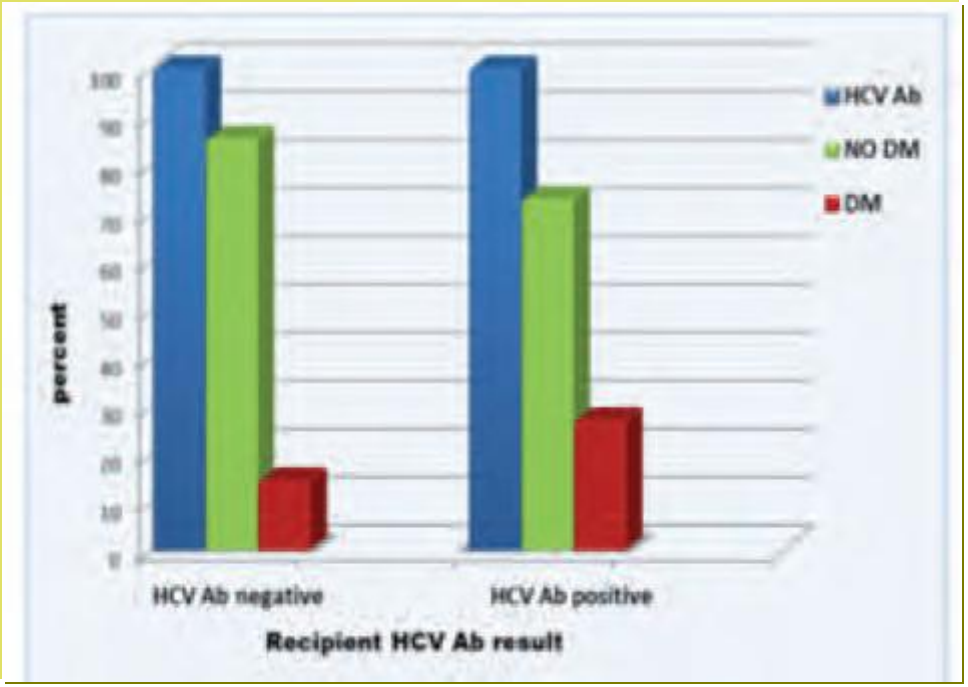
			Unadjusted			Multivariable adjusted		
Number of	Patients	Events	HR	95% CI	*P*	HR	95% CI	*P*
Normal glucose tolerance	1265	139	1.0			1.0		
Diabetes before transplantation	478	53	1.20	(0.87-1.64)	0.27	1.34	(0.92-1.94)	0.12
Posttransplantation diabetes	165	17	1.15	(0.69-1.90)	0.59	1.42	(0.84-2.38)	0.19
Impaired glucose tolerance	202	21	1.02	(0.64-1.63)	0.94	1.09	(0.67-1.76)	0.73

Model C. Observational time starting at 1 year after renal transplantation. Surviving patients censored at January 1, 2015

			Unadjusted			Multivariable adjusted		
Number of	Patients	Events	HR	95% CI	*P*	HR	95% CI	*P*
No diabetes	1368	138	1.0			1.0		
Diabetes before transplantation	444	49	1.23	(0.89-1.70)	0.22	1.32	(0.94-1.85)	0.11
Posttransplantation diabetes	219	23	1.25	(0.80-1.94)	0.33	1.25	(0.80-1.96)	0.33

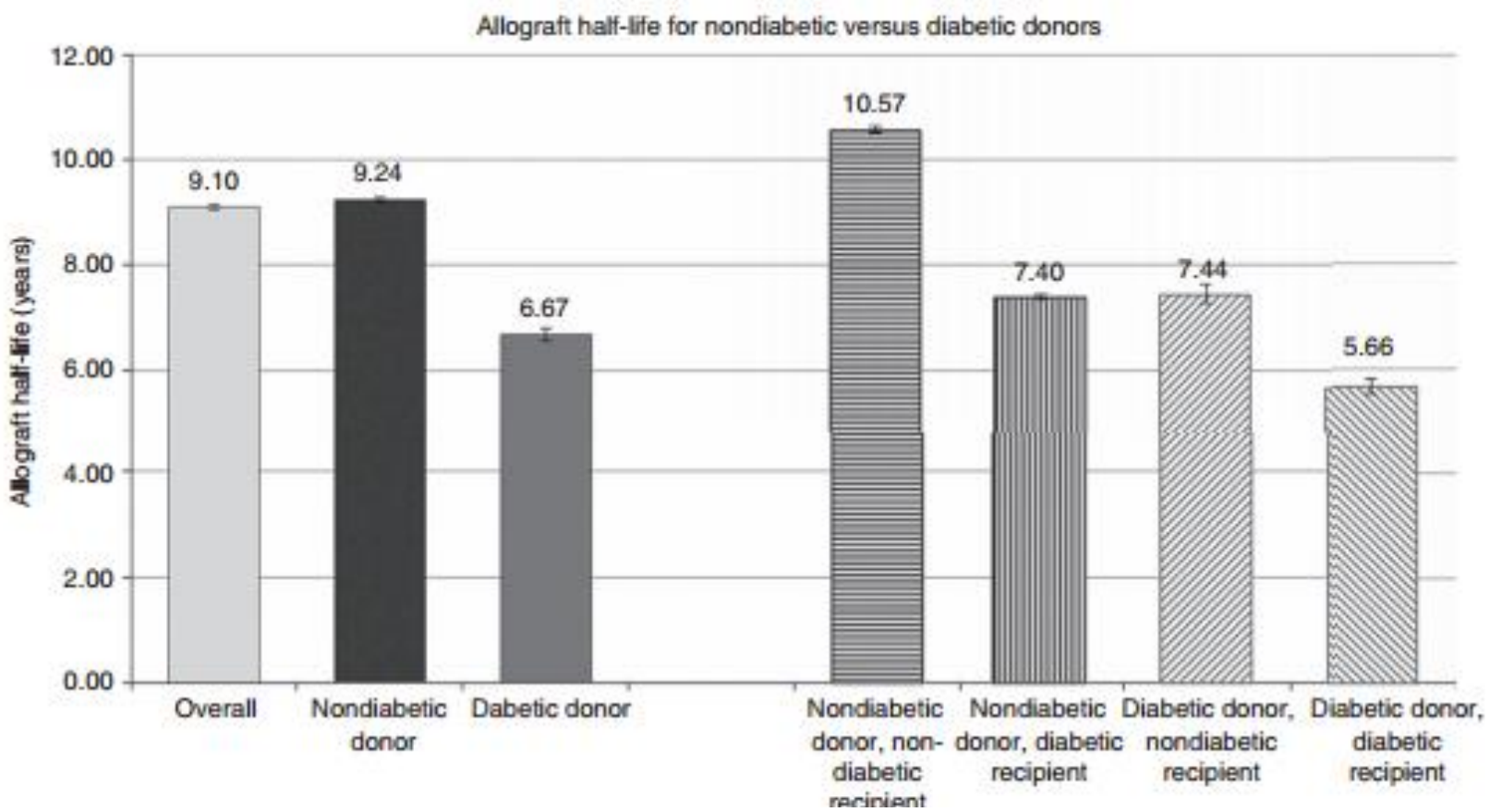
Transplantation 2017; in press

PTDM and HCV



Experimental and Clinical Transplantation (2015) 1: 26-34

Diabetes and Donors



Kidney International (2016) 89, 636–647

Diabetes After Live Kidney Donation

Urology and Nephrology Center

DNG Dakahlia Nephrology Group

ELSEVIER CrossMark

Study of the Risk Factors and Complications of Diabetes Mellitus After Live Kidney Donation

Mohammed M. Abuelmagd*, A.M. Nagib, Megahed M. Abuelmagd, A.F. Refaie, Y.A. Elhindi, M.F. Ahmed, M.H. Ali, H.M. Elmaghrabi, and M.A. Bakr

Department of Dialysis and Transplantation, the Urology and Nephrology Center, Mansoura University, Mansoura, Egypt

Transplantation Proceedings, 47, 1152-1157 (2015)

Corners

1. Why?
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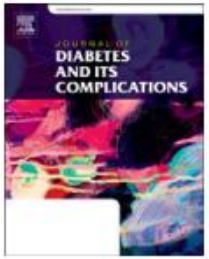
10. **Closing**

DKD:
Multifactorial Intervention

Contents lists available at ScienceDirect

Journal of Diabetes and Its Complications

journal homepage: WWW.JDCJOURNAL.COM



Combined diabetes-renal multifactorial intervention in patients with advanced diabetic nephropathy: Proof-of-concept

Leon Fogelfeld [a,*], Peter Hart [b], Jadwiga Miernik [a], Jocelyn Ko [b], Donna Calvin [c], Bettina Tahsin [a], Anwar Adhami [a], Rajeev Mehrotra [a], Louis Fogg [d]

[a] Division of Endocrinology, Cook County Health & Hospitals System, Chicago, IL
[b] Division of Nephrology, Cook County Health & Hospitals System, Chicago, IL
[c] Department of Nursing, University of Illinois at Chicago, Chicago, IL
[d] Department of Nursing, Rush University Medical Center, Chicago, IL

J Diabetes Complications. 2016 Dec 8. pii: S1056-8727(16)30978-3

Diabetes and Kidney Function: Effect of Exercise

DIABETICMedicine

DOI: 10.1111/dme.12886

Research: Epidemiology

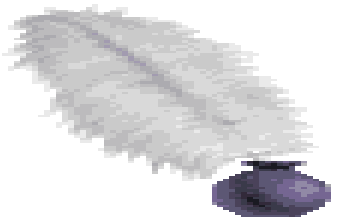
Objectively measured sedentary time, physical activity and kidney function in people with recently diagnosed Type 2 diabetes: a prospective cohort analysis

- Reducing time spent sedentary and increasing overall physical activity may offer intervention opportunities to improve kidney function among individuals with diabetes.

Diabet. Med. 33, 1222–1229 (2016)

Urology and Nephrology Center

DNG
Dakahlia Nephrology Group



Urology and Nephrology Center

DNG Dakahlia Nephrology Group

YouTube KW

Diabetes Kidney Disease Updates

Diabetic Kidney Disease Updates

Hussein Sheashaa, MD, FACP

Professor of Nephrology, Urology and Nephrology Center and Director of Medical E-Learning Unit, Mansoura University, and Executive Director of ESNT- Virtual Academy: http://lms.mans.edu.eg/esnt/

3rd GCC Organ transplantation and Nephrology Congress, Kuwait, January 18-21, 2017

0:10 / 1:00:45