XVIII
CONGRESSO
NAZIONALE
CARD

29-31 ottobre 2020

CARD
Confederazione
Associazioni
Regionali di Distretto
Società Scientifica delle attività
Socioassistenziale Territoriali

IL DISTRETTO E LE COMUNITA'

Verso nuove alleanze a favore
delle fragilità e della continuità di cura

Le complicanze cardiorenali del paziente diabetico e le sue implicazioni per il SSR

Dr. Cesare Berra
Head of diabetic and metabolic department
IRCCS MultiMedica Sesto San Giovanni, Italy

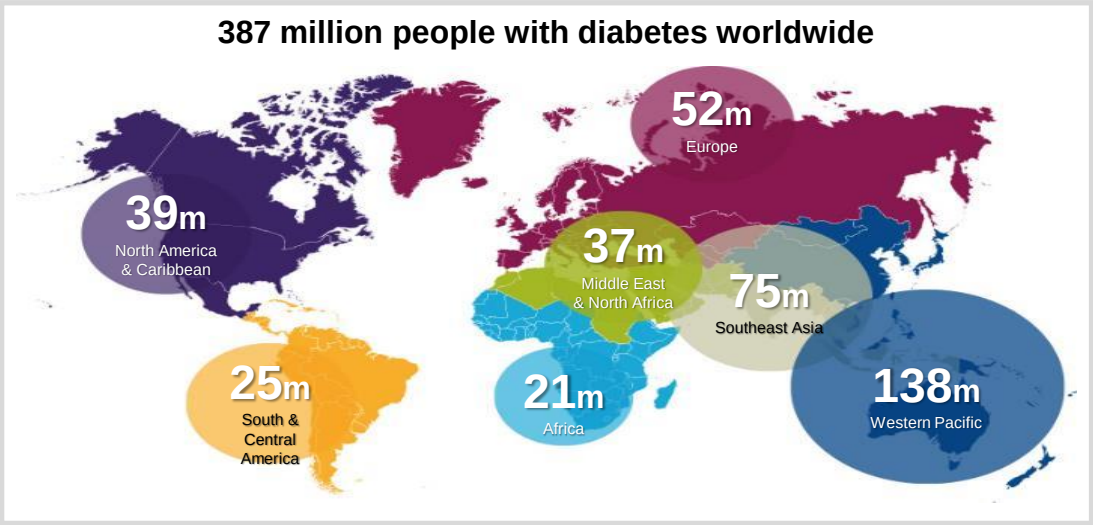
world diabetes day
14 November

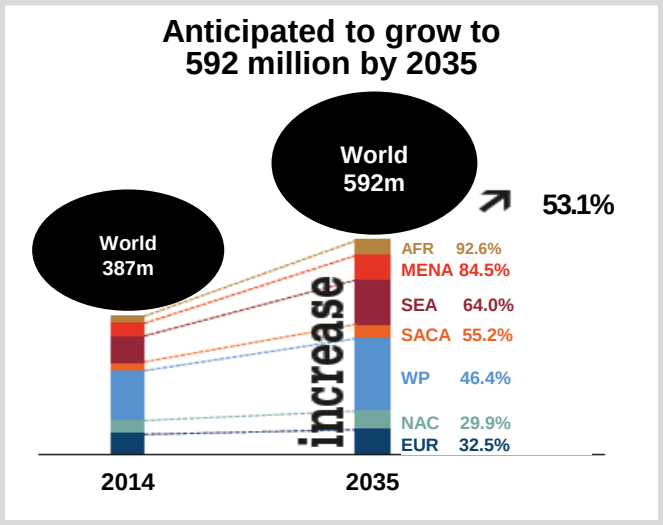
XIII CONGRESSO NAZIONALE CARD

Conflitto di interessi

Tipo di affiliazione o supporto finanziario	***Sponsor***
Partecipazione board scientifici	Eli Lilly, Astra Zenica, Novo Nordisk, Boehringer, Mundipharma, Sanofi
Studi Clinici	Eli Lilly, Novo Nordisk, Sofar
Letture sponsorizzate	Boehringer, Eli Lilly, Sanofi

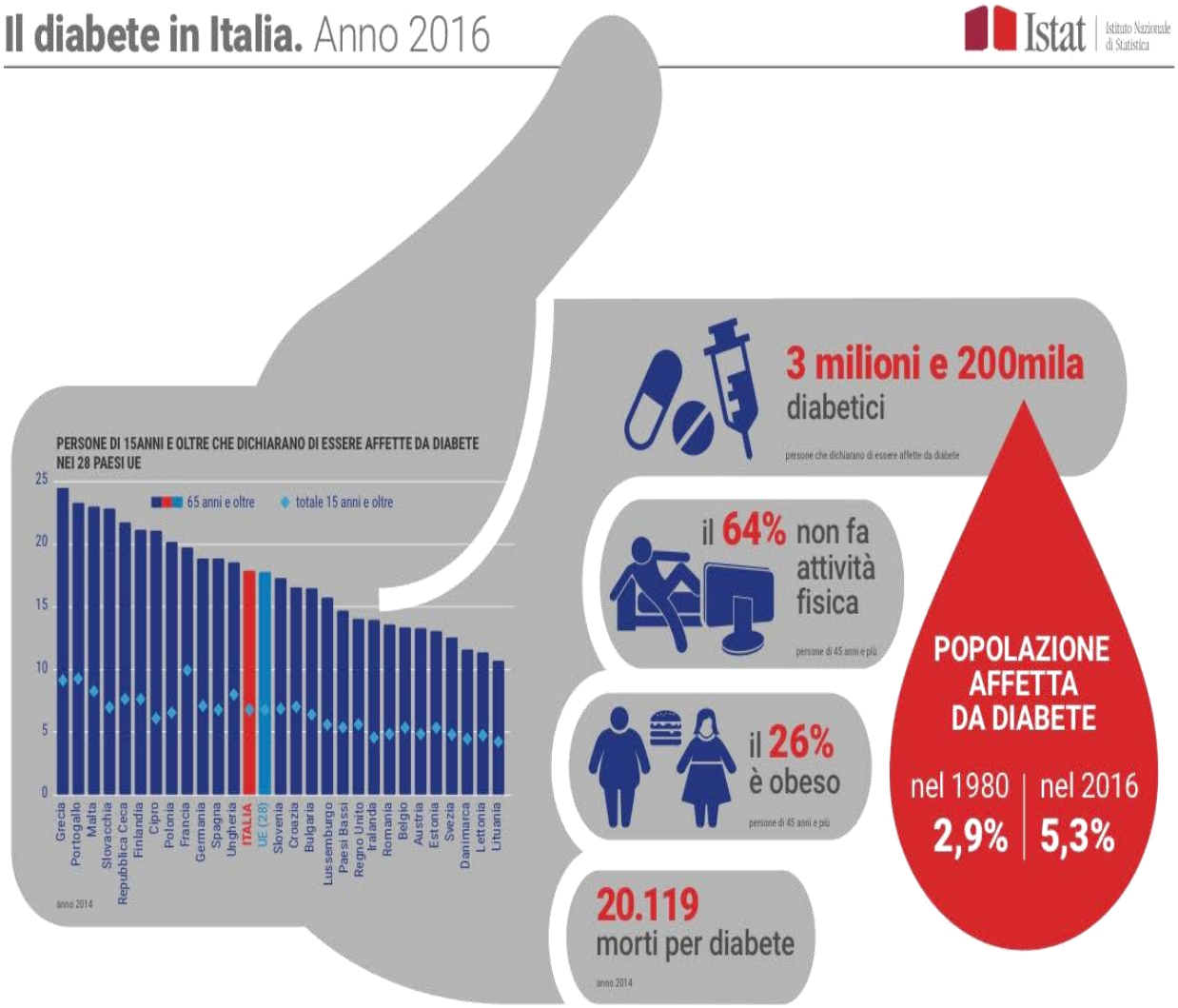
The Prevalence of Type 2 Diabetes Continues to Increase Around the World



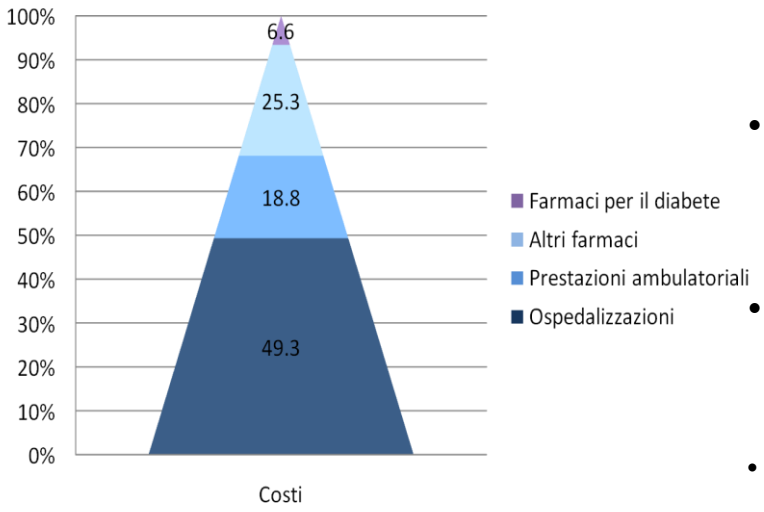


IDF Diabetes Atlas; 6th Edition

IL DIABETE IN ITALIA



DATI ISTAT 20



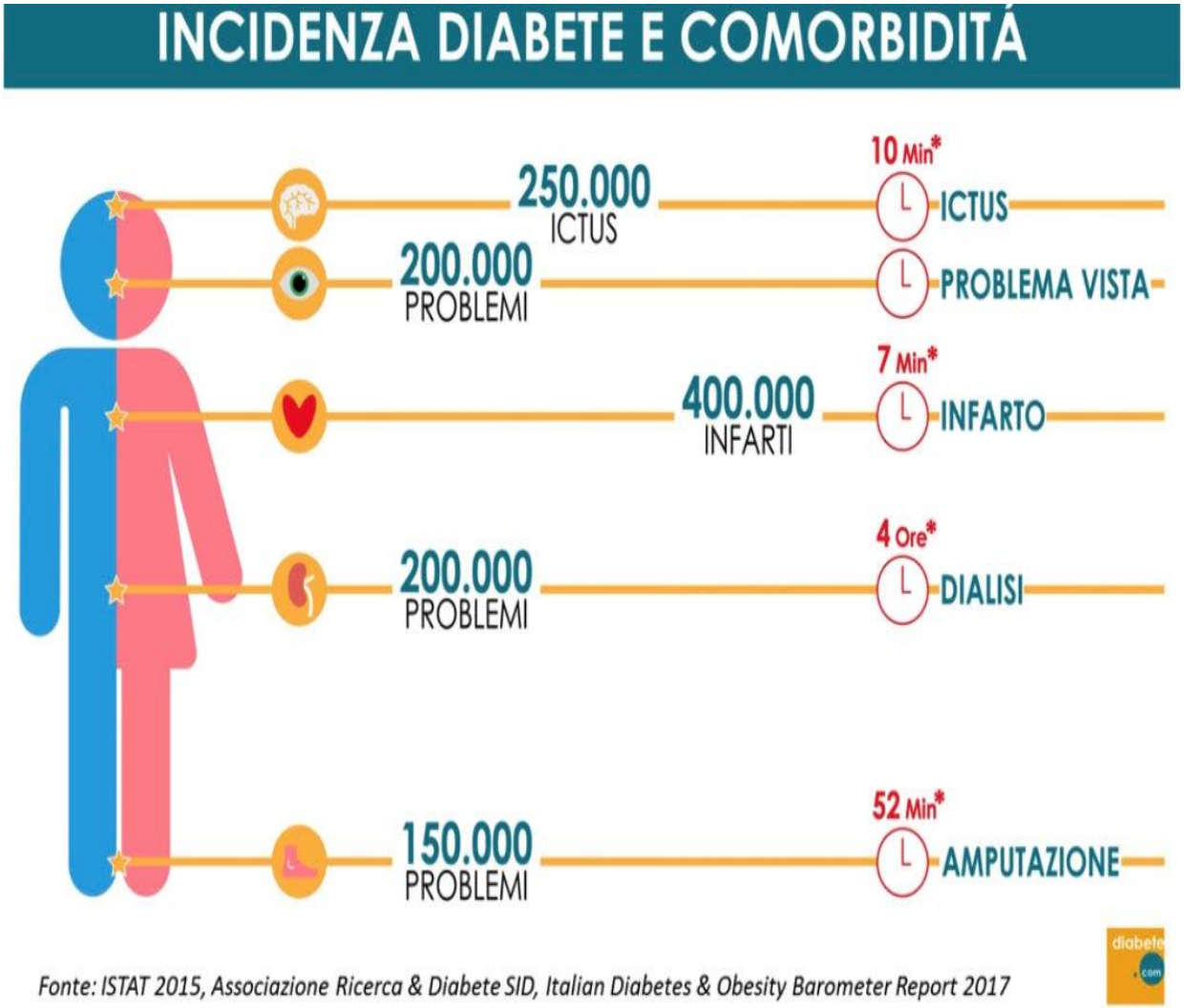
- I costi del diabete per il budget della sanità italiana ammontano al 9% delle risorse. Questo vuol dire più di **9,22 miliardi di € all'anno** o 1,05 milioni di € ogni ora.

- Il costo della sanità **per un cittadino italiano con diabete** è in media di **2.600 € all'anno,** più del doppio rispetto a cittadini di pari età e sesso, ma senza diabete.

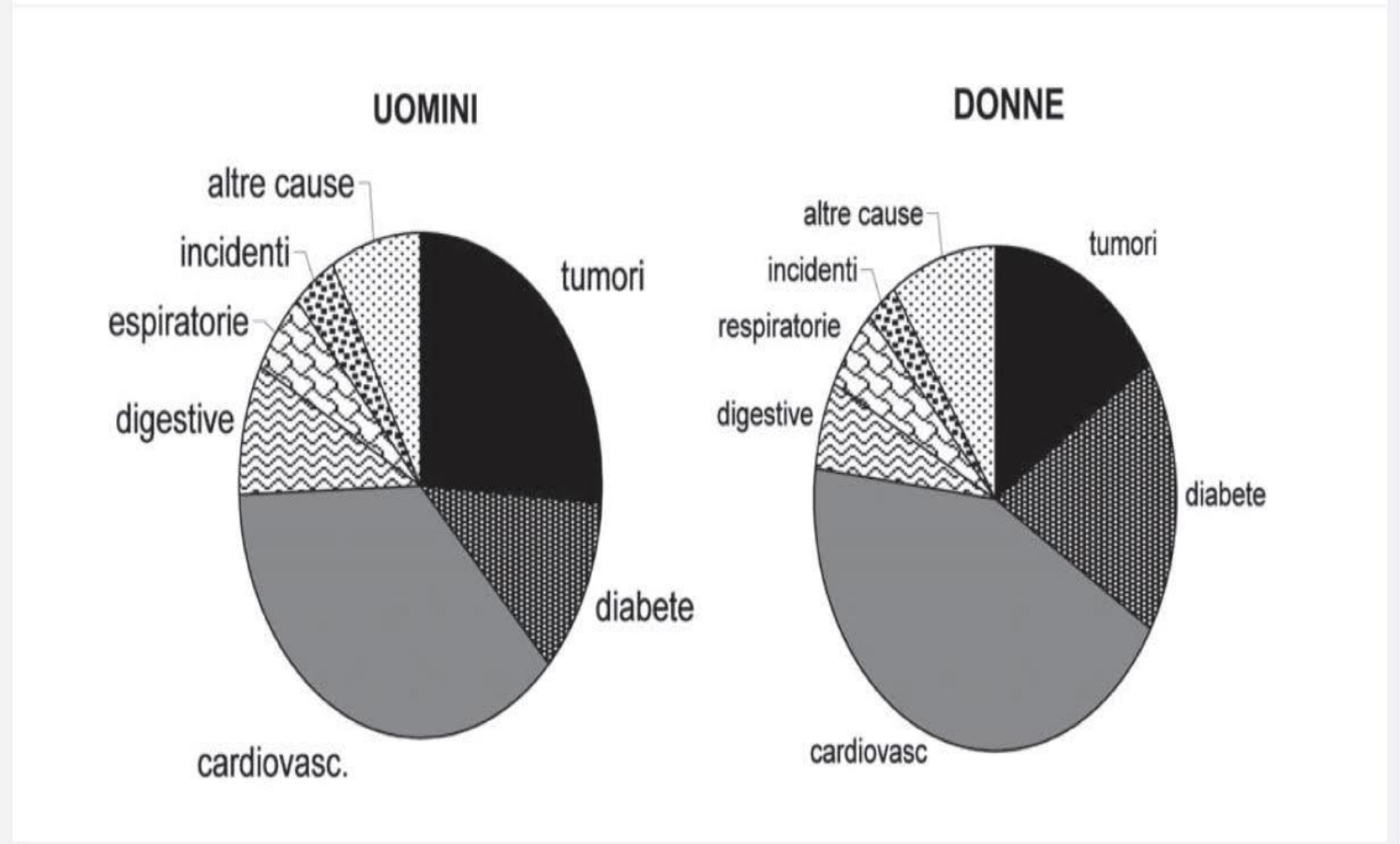
- Solo il 7% della spesa riguarda i farmaci anti diabete, il 25% è legato alle terapie per le complicanze e le patologie concomitanti, **mentre il 68% è relativo al ricovero ospedaliero e alle cure ambulatoriali**.

- Se la patologia continuerà a crescere ai ritmi attuali, presto le risorse disponibili non saranno più sufficienti a garantire equità di accesso a cure di qualità adeguata

IL DIABETE E LE SUE COMORBIDITA'



CAUSE DI MORTE NEI DIABETICI TIPO 2 IN ITALIA

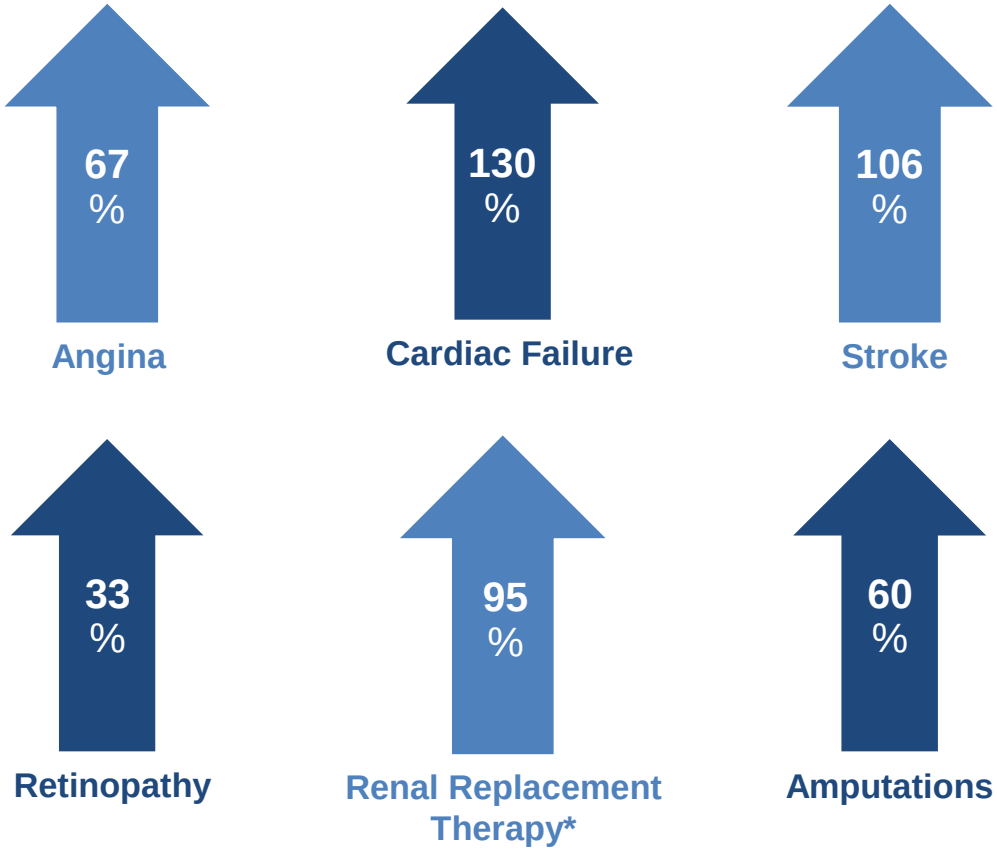


VERONA DIABETE STUDY

Proactive approaches need to be taken in treating Type 2 diabetes[1]

- **Diabetes is:**
- Responsible for more than 100 amputations a week
- The leading cause of preventable sight loss in people of working age
- A major contributor of kidney failure, heart attack, and stroke

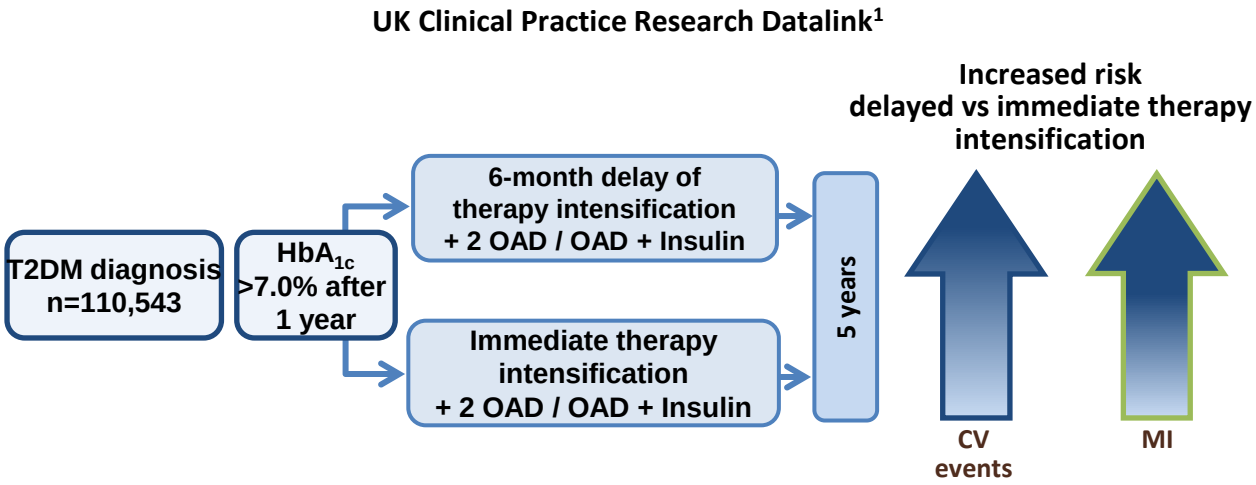
- Between 2007 and 2012, avoidable complications increased significantly



*Term used for life-supporting treatments required to treat and stage kidney disease

1. Diabetes UK. State of the Nation – Challenges for 2015 and Beyond

One Study Showed That Delay in Therapy Intensification of 6 Months Increases Cardiovascular Risk in Type 2 Diabetes Patients[1,2]

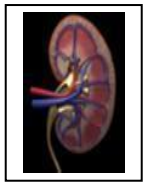
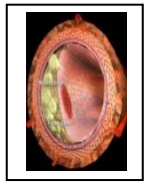


- Delayed therapy intensification vs. immediate therapy intensification led to[1]:
  - Significantly increased risk in MI (HR 1.62, 95% CI 1.46,1.80; *P*<0.01)
  - Significantly increased risk in CV events (HR 1.67, 95% CI 1.39, 2.01; *P*<0.01)

1. Paul *S et al. Cardiovasc Diabetol*. 2015 Aug 7;14:100.. 2. Holman RR et al. *N Engl J Med*. 2008; 359:1577–1589.

At least 67% of all patients with type 2 diabetes (T2DM) are at high risk of declining renal function

Prevalence of high risk of declining renal function

Risk factors of declining renal function		Prevalence in T2DM patients (%)
1 Hypertension		67[1]
2 Poor glycaemic control		43[2]
3 Microalbuminuria		30[2]
4 Dyslipidemia		24* [3,4]

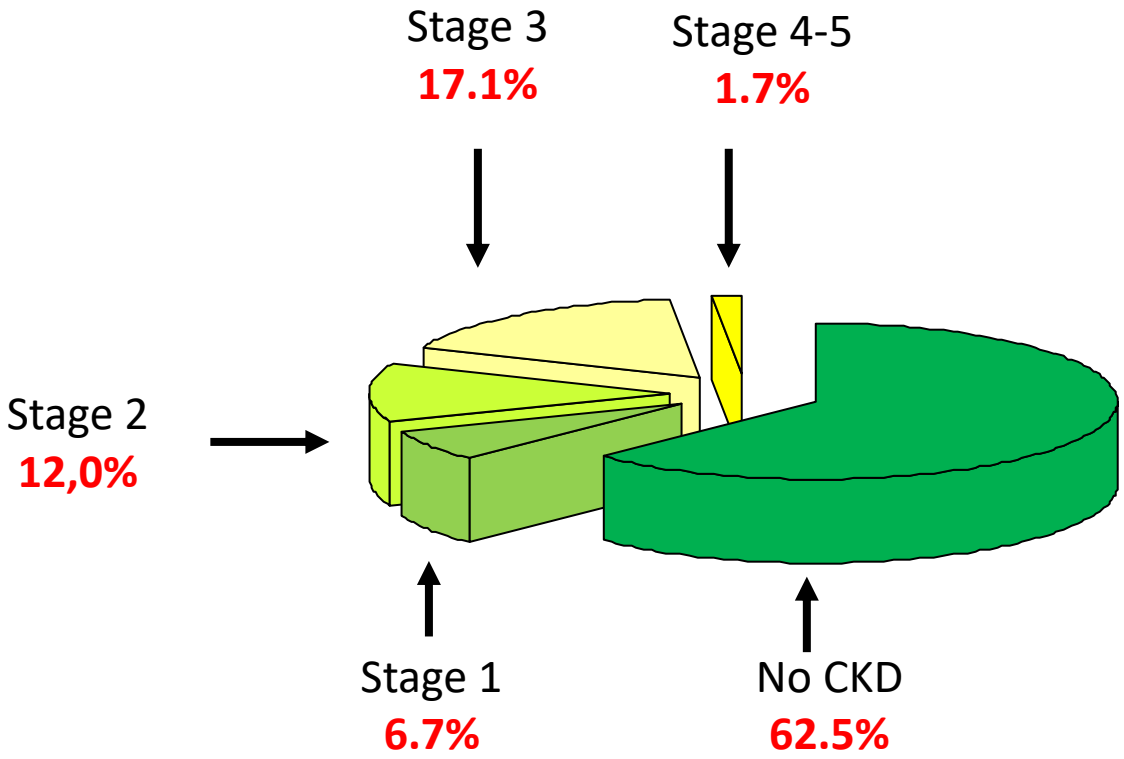
Risk range likely to be significantly higher than 67% due to incomplete overlap of risk factors

*Dyslipidemia defined as hypertriglyceridemia in male subjects

1. American Diabetes Association (ADA).National Diabetes Fact Sheet updated for 2011. http://www.diabetes.org/diabetes-basics/diabetes-statistics. Accessed 8 February 2011.
2. Cheung BMY, *et al*. *Am J Med* 2009;122:443–53. 3. Mooradian A. *Nat Clin Pract Endocrinol Metab* 2009:5;150–15.
4. Kannel WB. *Am Heart J* 1985:110;1100–7.

Approximately 40% of T2DM patients have renal complications

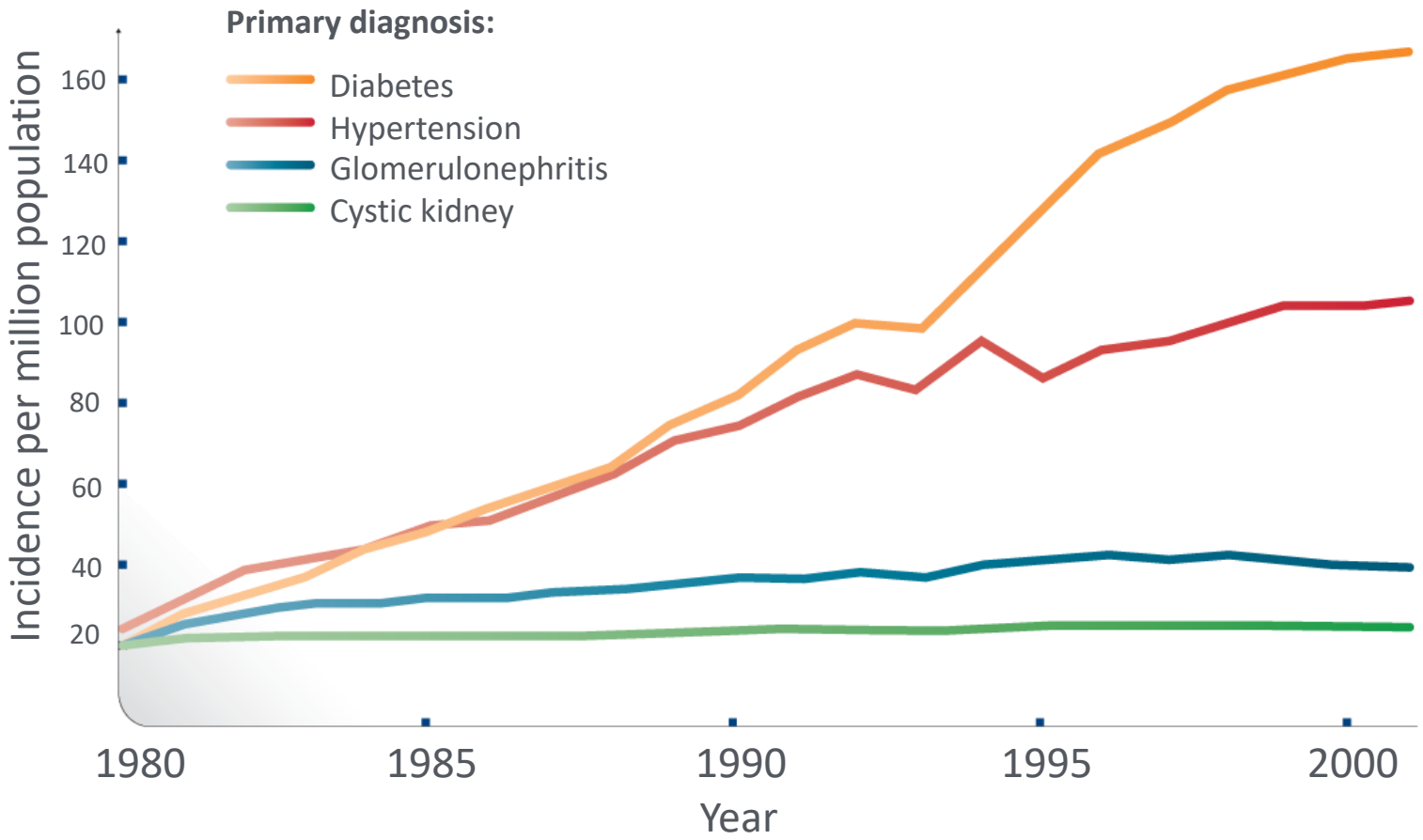
RIACE (Renal Insufficiency And Cardiovascular Events) Italian Multicenter Study



Total population (n=15,773)

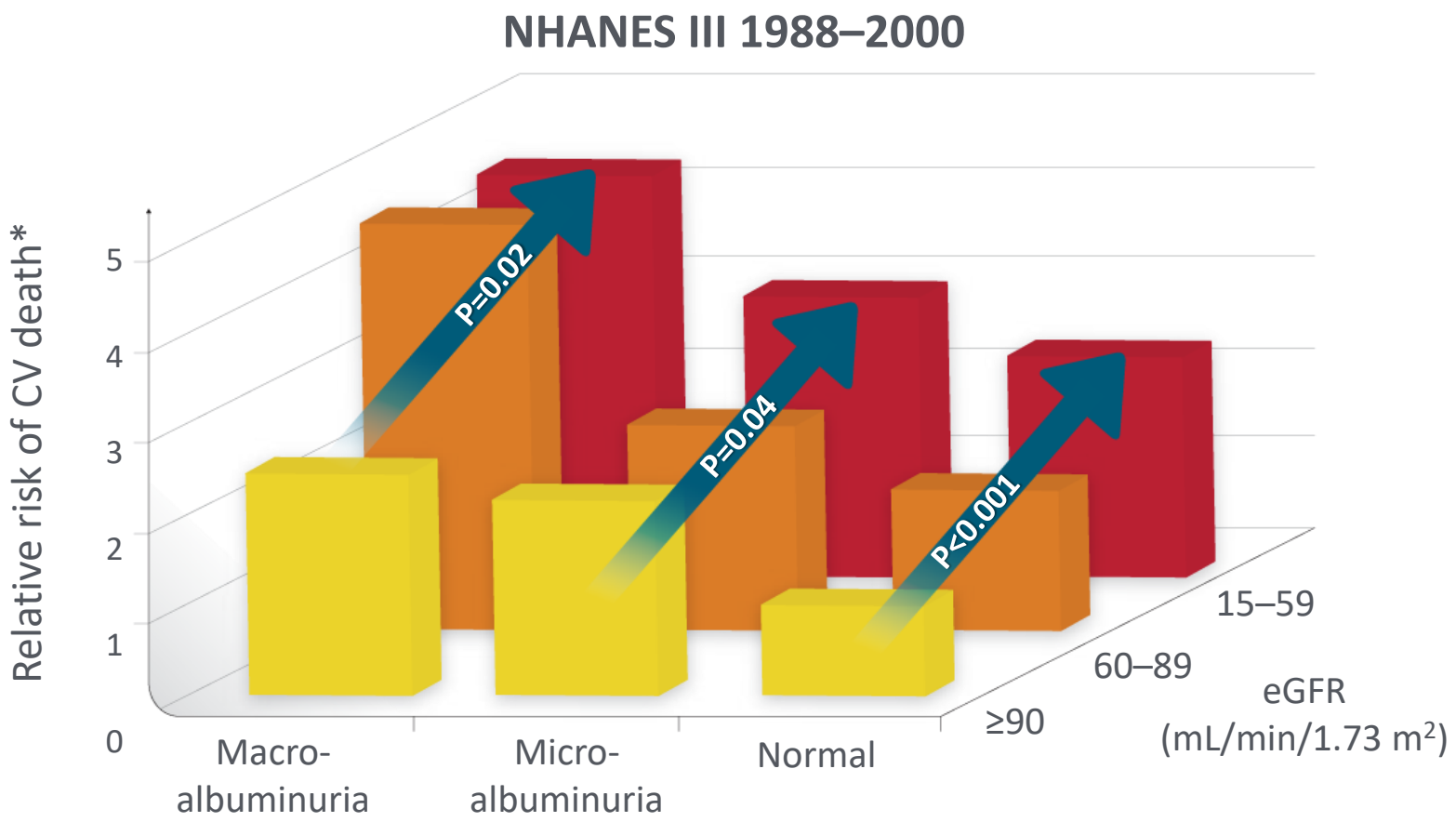
Penno G. Journal of Hypertension 2011, 29:1802–1809

The incidence of ESRD is increasing due to the rising incidence of diabetes



1. US Renal Data System. USRDS 2005 Annual Data Report.

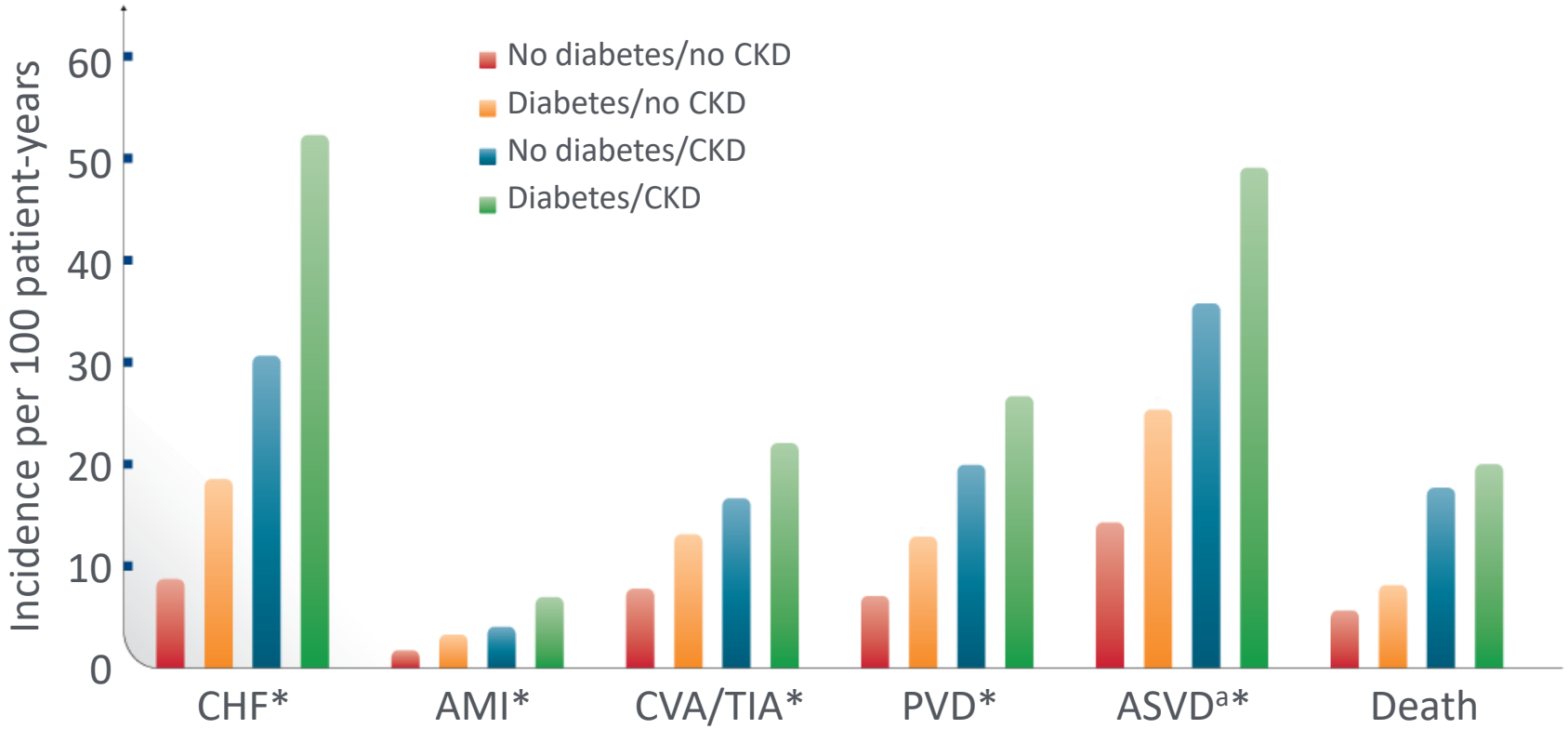
Cardiovascular (CV) mortality risk increases with declining renal function[1]



*Adjusted for age, sex, race/ethnicity, previous CV disease, blood pressure category, use of antihypertensive medication, diabetes mellitus, smoking status, body mass index, physical activity level, low density lipoprotein and high density lipoprotein cholesterol, log triglyceride level, and C-reactive protein category.

1. Astor BC, *et al*. *Am J Epidemiol* 2008;167:1226–34.

Risk for CV events is greatest when both diabetes and CKD are present[1]



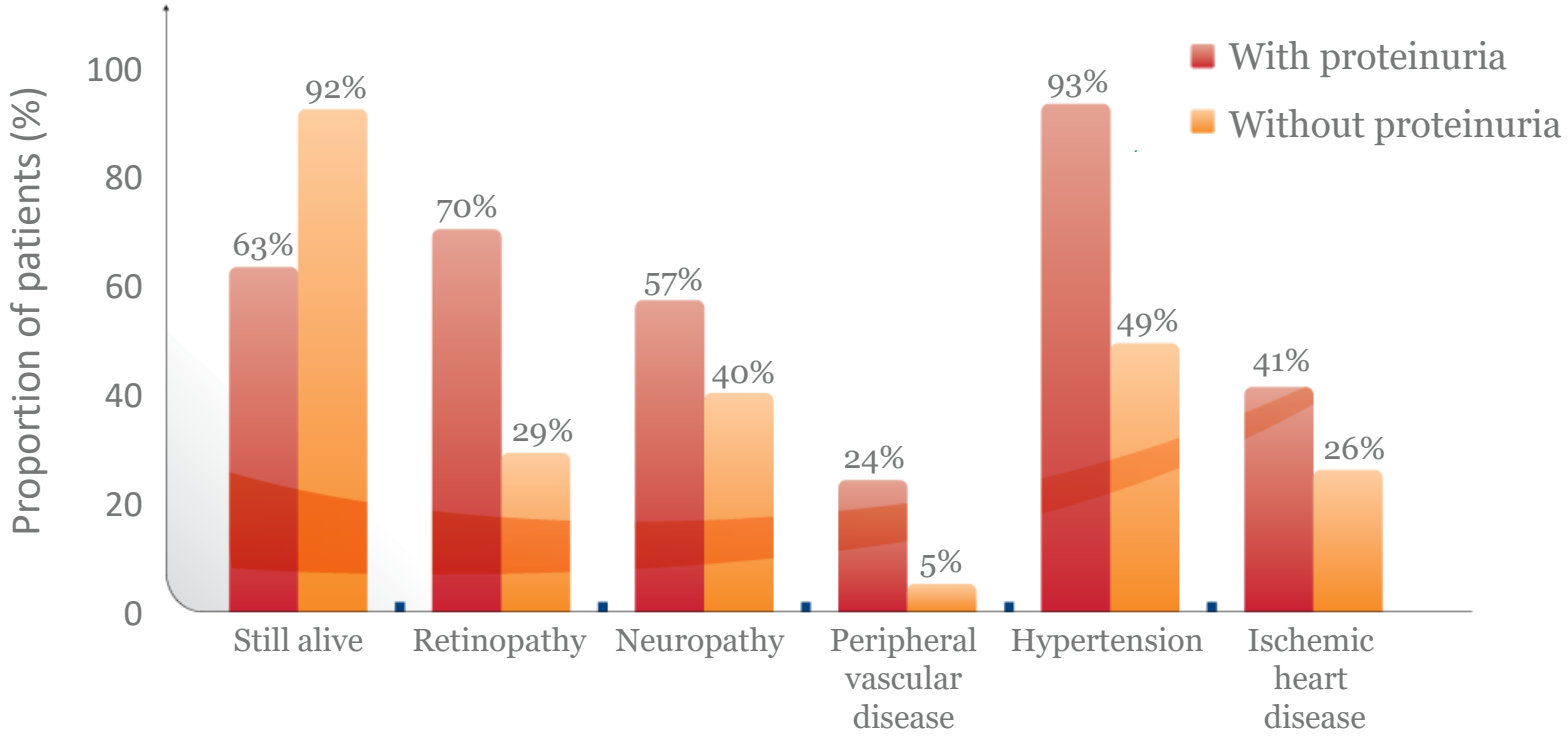
* CHF=congestive heart failure; AMI=acute myocardial infarction; CVA/TIA=cerebrovascular accident/transient ischemic attack; PVD=peripheral vascular disease; ASVD=atherosclerotic vascular disease. [a]ASVD was defined as the first occurrence of AMI, CVD/TIA, or PVD.

1. Foley RN, *et al*. *J Am Soc Nephrol* 2005;16:489–95.

Proteinuria is associated with a high risk of vascular disease and death[1]

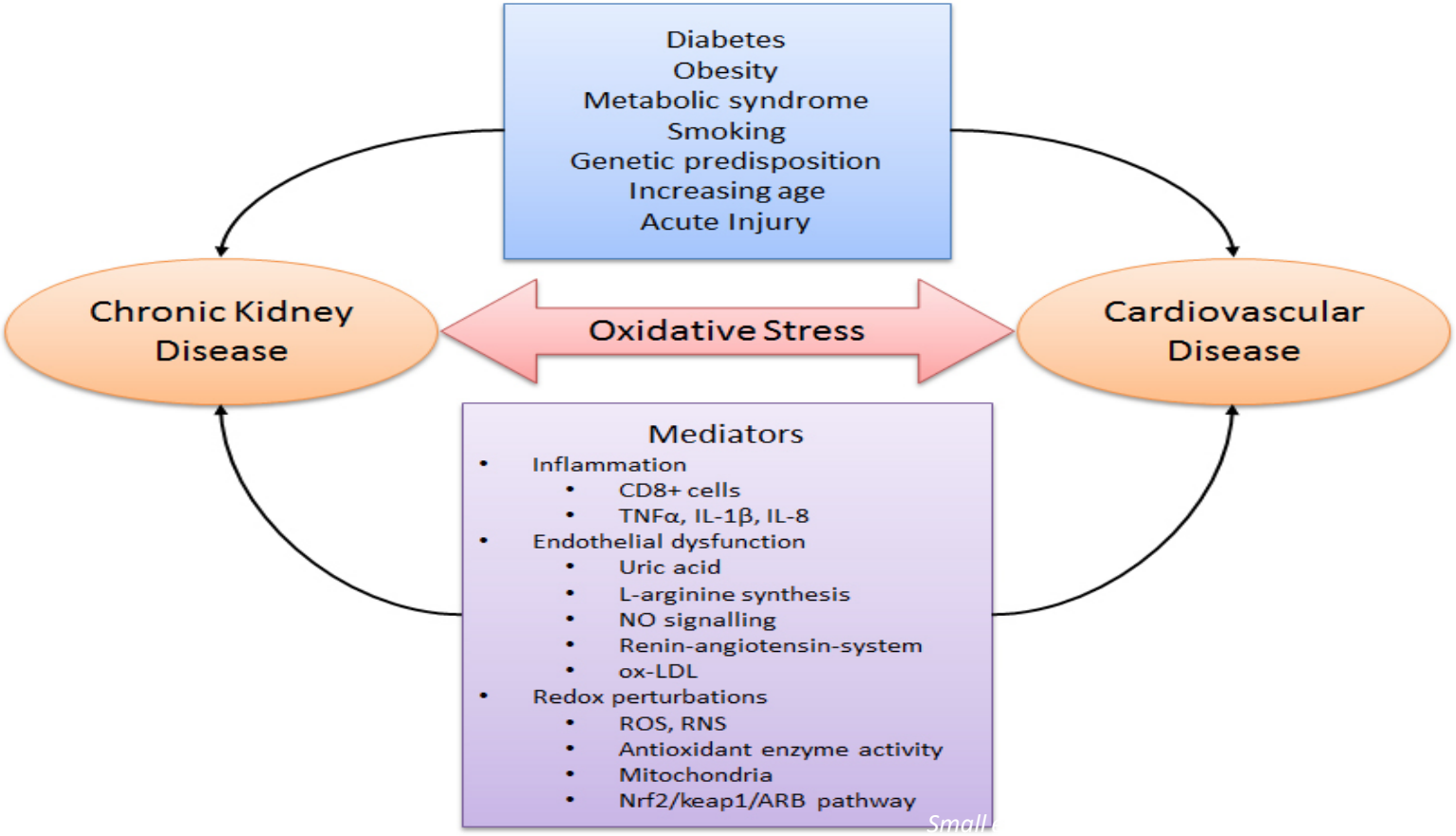
5-year outcomes in T2DM patients with and without proteinuria

Proteinuria is associated with ≈ 5x greater likelihood of death in patients with T2DM (37% vs 8%, P<0.0001)



1. Jude EB, *et al*. *Q J Med* 2002;95:371–7.

Il diabete è strettamente interconnesso alle malattie cardiovascolari



Diabetes mellitus and glucose lowering strategies

- To date, there is little proof that glycaemic control per se affects the risk for cardiovascular (CV) events.
- Furthermore, there is concern that intensive glucose lowering or the use of specific **glucose-lowering drugs may be associated with adverse cardiovascular outcomes**.
- Therefore, it is necessary to establish the cardiovascular safety benefits of glucose-lowering agents.

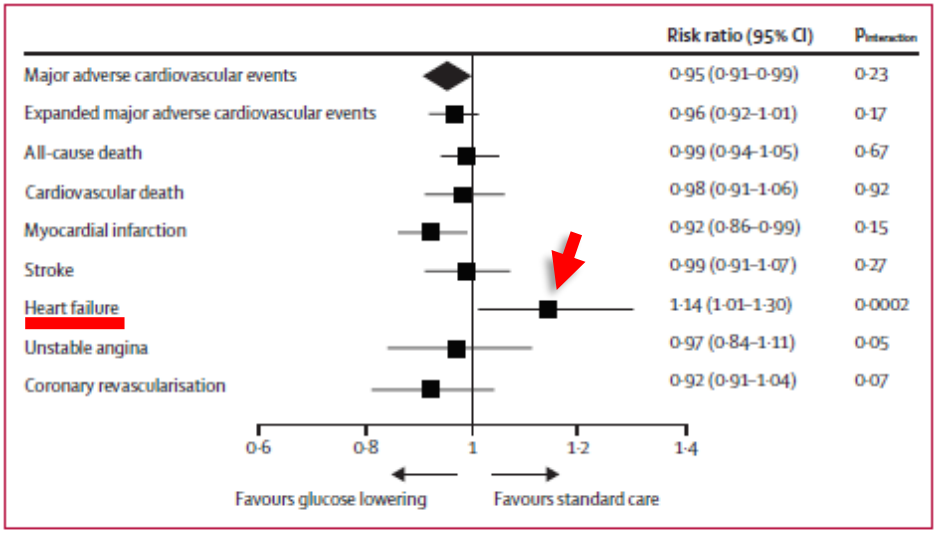


Figure 5: Major adverse cardiovascular events and individual cardiovascular events with glucose-lowering drugs or strategies versus standard care

Udell JA, Cavender MA et al. Glucose-lowering drugs or strategies and cardiovascular outcomes in patients with or at risk for type 2 diabetes: a meta-analysis of randomised controlled trials. Lancet Diabetes Endocrinol 2015.

Diabetes Care Volume 41, January 2018

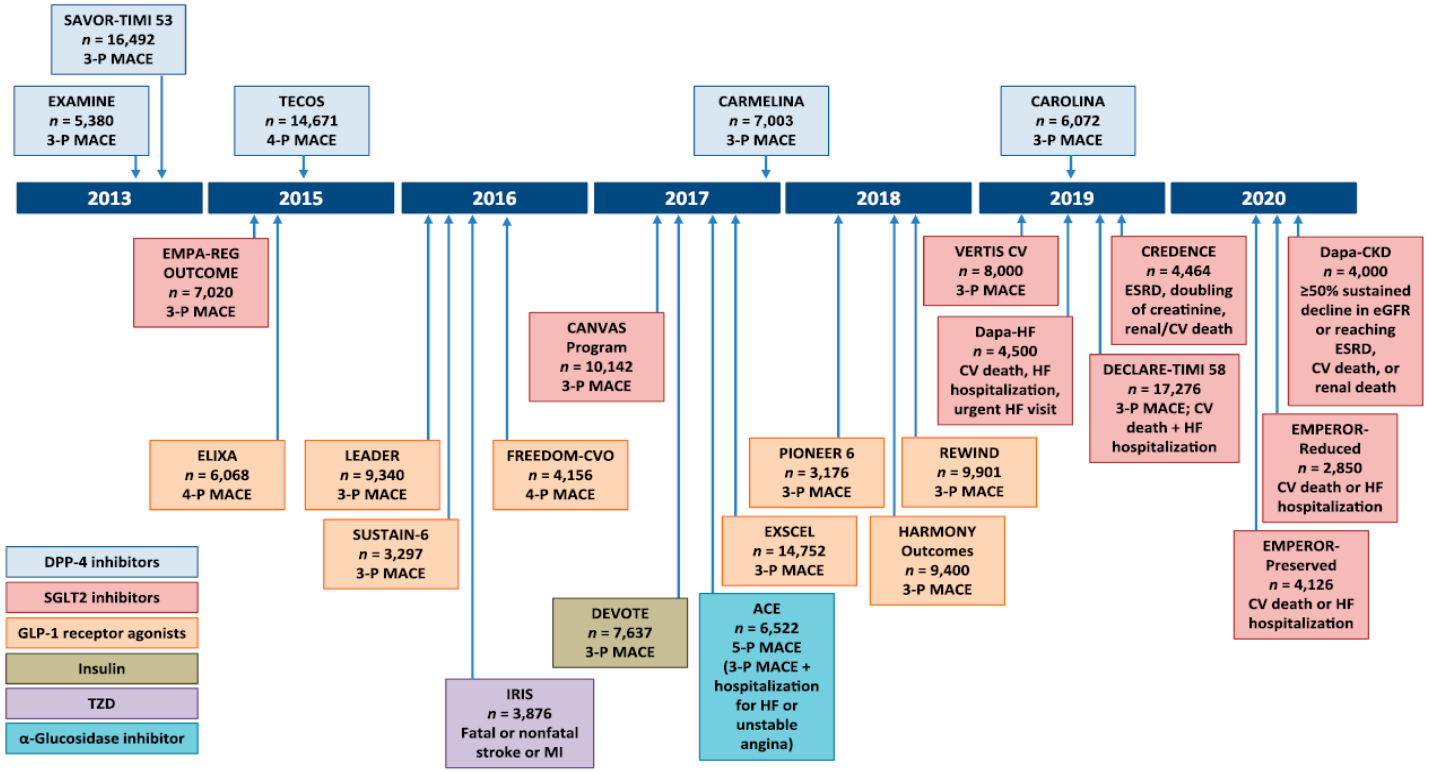
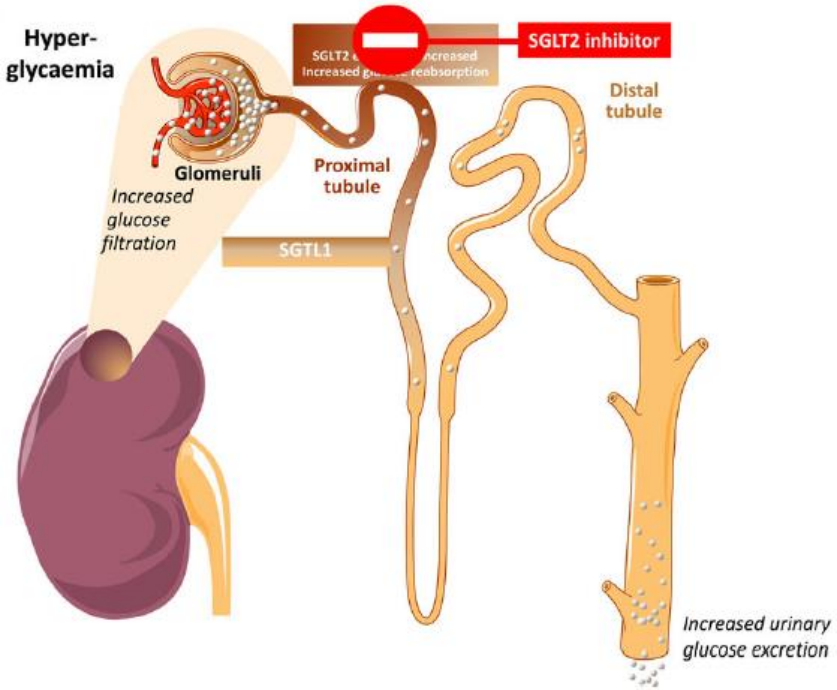


Figure 1—Completed and ongoing CVOTs (6–14,39,44–58). 3-P, 3-point; 4-P, 4-point; 5-P, 5-point. DECLARE-TIMI 58, Multicenter Trial to Evaluate the Effect of Dapagliflozin on the Incidence of Cardiovascular Events; ESRD, end-stage renal disease; HARMONY Outcomes, Effect of Albiglutide, When Added to Standard Blood Glucose Lowering Therapies, on Major Cardiovascular Events in Subjects With Type 2 Diabetes Mellitus; PIONEER 6, A Trial Investigating the Cardiovascular Safety of Oral Semaglutide in Subjects With Type 2 Diabetes; REWIND, Researching Cardiovascular Events With a Weekly Incretin in Diabetes; VERTIS CV, Cardiovascular Outcomes Following Ertugliflozin Treatment in Type 2 Diabetes Mellitus Participants With Vascular Disease.

Sodium-glucose co-transporter 2 (SGLT2) inhibitors

- **Sodium-glucose co-transporter 2 (SGLT2):** expressed in the proximal tubule, mediates reabsorption of approximately 90% of the filtered glucose load.
- **SGLT2 inhibitors** promote the renal excretion of glucose and thereby modestly lower elevated blood glucose levels in patients with type 2 diabetes (mean reductions in Hb A1C compared with placebo ranging between 0.4 to 1.1 percent).



Effects of the SGLT2 inhibitors

SIDE EFFECTS:

Urinary tract infections
Genital infections

GLUCOSE LOWERING PROPERTIES

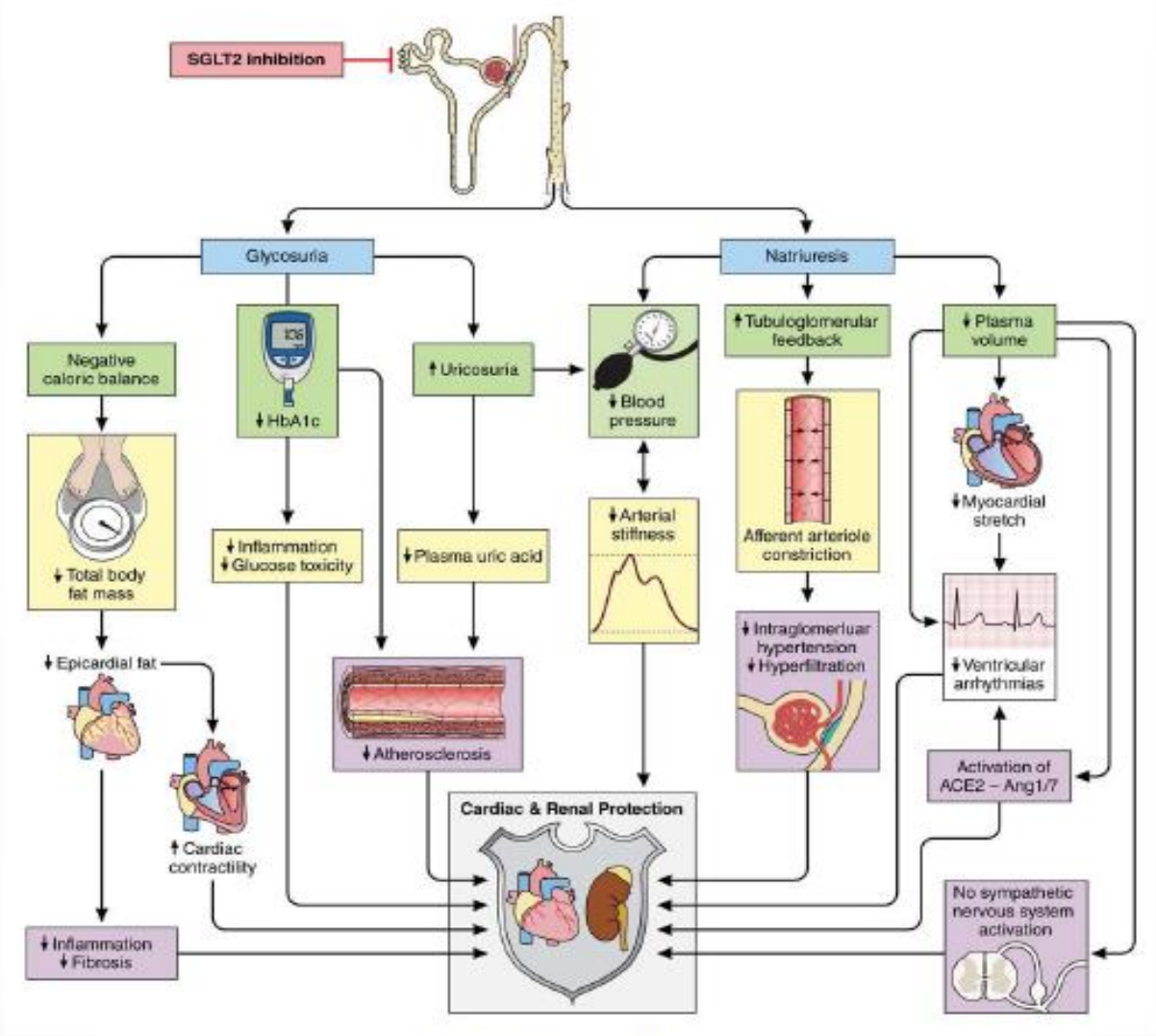
- increase **urinary glucose excretion**, reducing plasma glucose levels (glucose-dependent and insulin-independent)
- **increase sodium excretion** and **reduce plasma volume** due to glucose osmotic diuretic effects and natriuresis
- may improve **insulin sensitivity**
- increase **glucagon secretion** from a-cells in the pancreatic islet

BEYOND GLUCOSE CONTROL

- Induce a negative energy balance with an average **weight-reduction** of 2 - 3 kg
- **reduce blood pressure** (systolic in a range of 3 - 5 mmHg and diastolic 2 - 3 mmHg)
- directly affect the **tubulo-glomerular feedback** mechanism in the kidney
- mildly increase both **LDL-C** and **HDL-C**

Marx N and McGuire DK. Sodium-glucose cotransporter-2 inhibition for the reduction of cardiovascular events in high-risk patients with diabetes mellitus. Eur Heart J 2016.

EFFETTI PLEITROPICI CV degli SGLT2-I



Heerspink et al. 2016

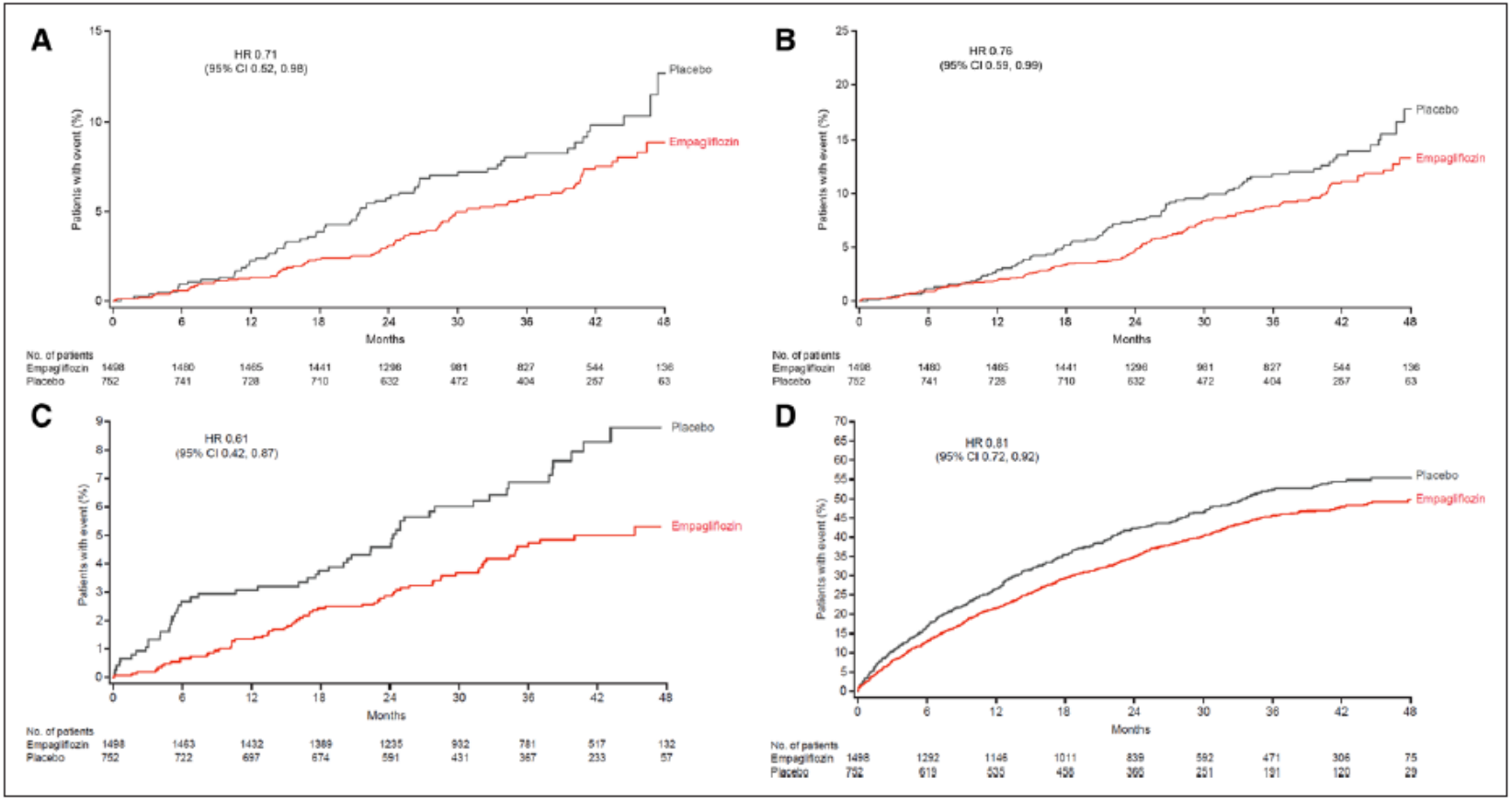


Figure 2. Time to cardiovascular death (A), all-cause mortality (B), hospitalization for heart failure (C), and all-cause hospitalization (D) with empagliflozin pooled and placebo in patients with prevalent kidney disease (estimated glomerular filtration rate <60 mL·min^{-1}·1.73 m^{-2} and/or macroalbuminuria [urine albumin-creatinine ratio >300 mg/g]) at baseline.

CANVAS STUDY

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Canagliflozin and Cardiovascular and Renal Events in Type 2 Diabetes

Bruce Neal, M.B., Ch.B., Ph.D., Vlado Perkovic, M.B., B.S., Ph.D., Kenneth W. Mahaffey, M.D., Dick de Zeeuw, M.D., Ph.D., Greg Fulcher, M.D., Ngozi Erondu, M.D., Ph.D., Wayne Shaw, D.S.L., Gordon Law, Ph.D., Mehul Desai, M.D., and David R. Matthews, D.Phil., B.M., B.Ch., for the CANVAS Program Collaborative Group*

CANVAS STUDY

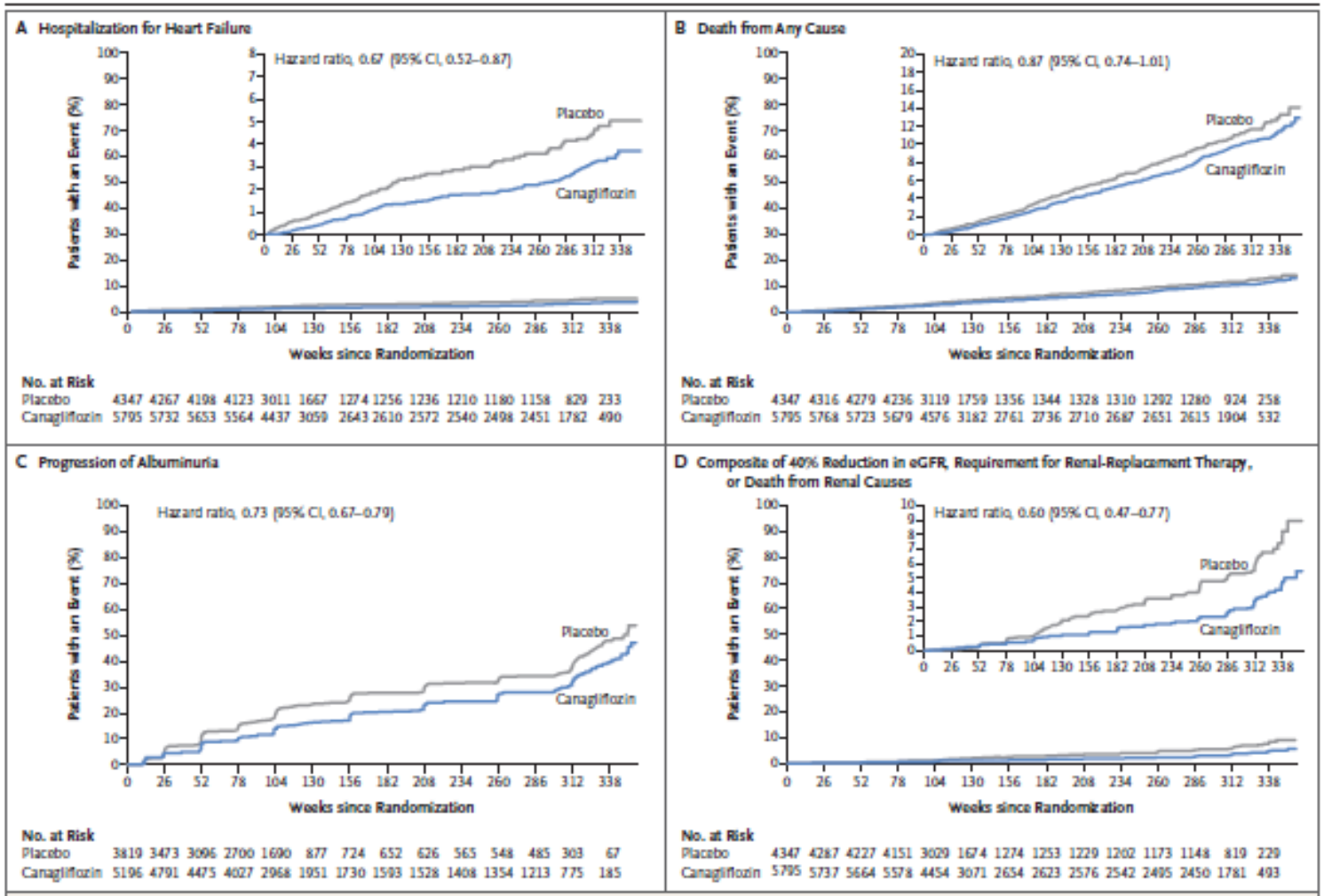


Figure 5. Rates of Hospitalization for Heart Failure, Death from Any Cause, and Renal Outcomes in the Integrated CANVAS Program.

The hazard ratios and 95% confidence intervals were estimated with the use of Cox regression models with stratification according to trial and history of cardiovascular disease for all canagliflozin groups combined versus placebo. Analyses are based upon the full, integrated data set comprising all participants who underwent randomization. The insets in Panels A, B, and D show the same data on enlarged y axes.

THE NEW ENGLAND JOURNAL of MEDICINE

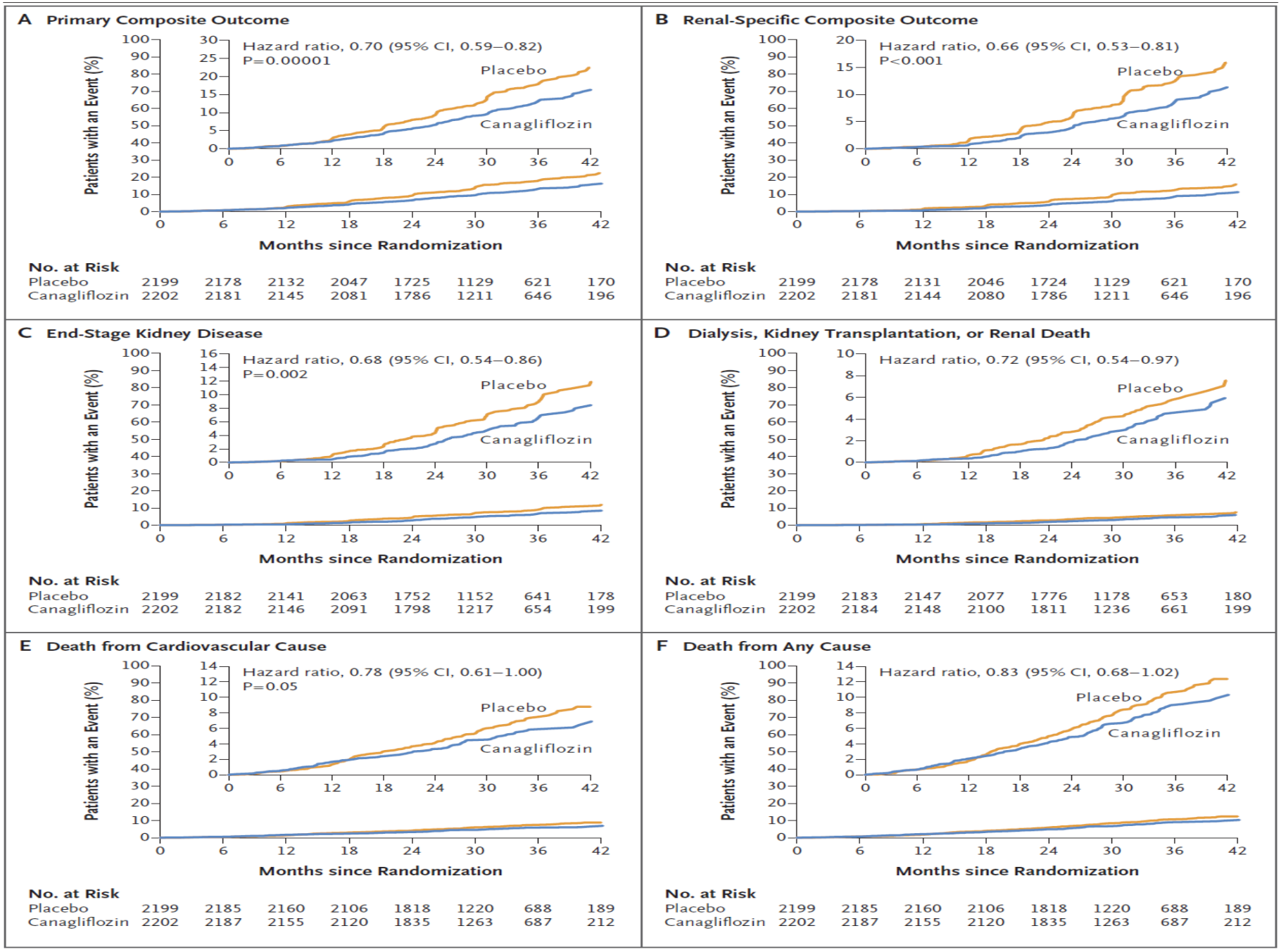
ORIGINAL ARTICLE

Canagliflozin and Renal Outcomes in Type 2 Diabetes and Nephropathy

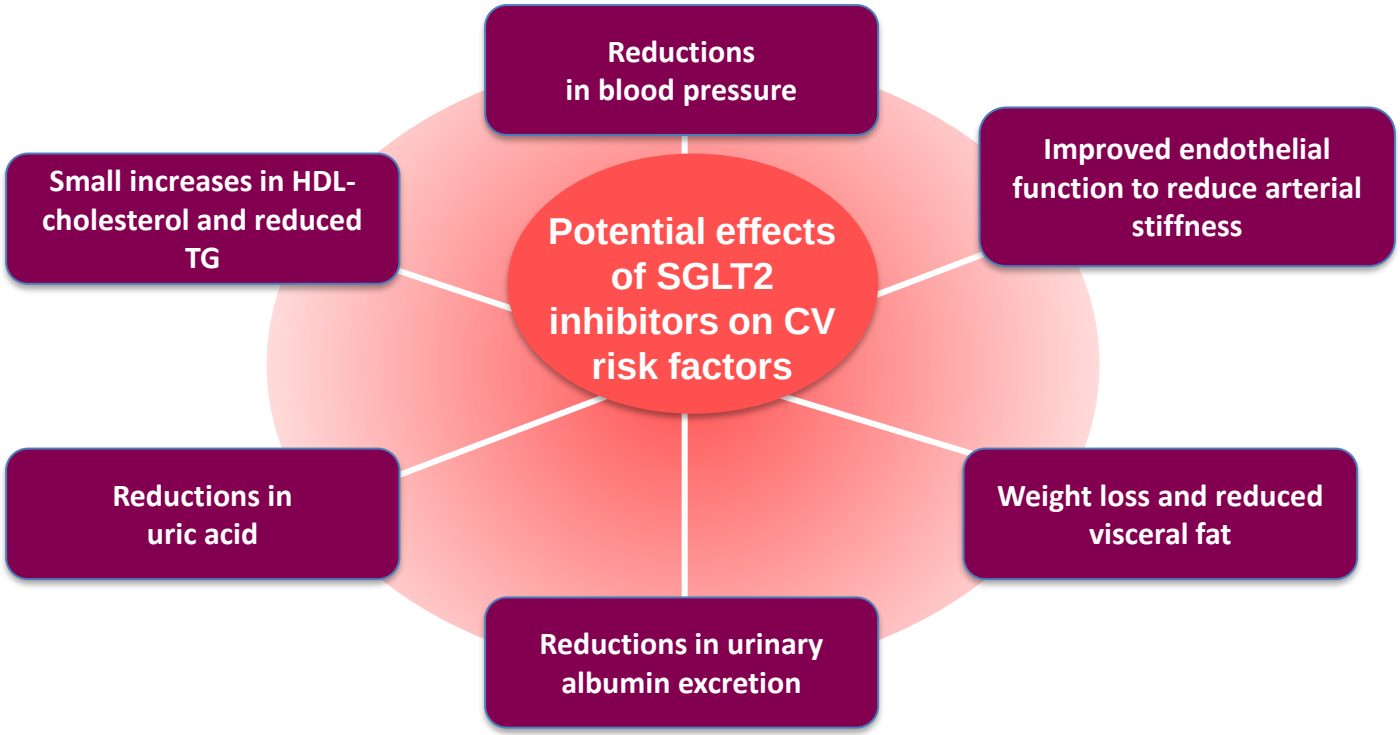
V. Perkovic, M.J. Jardine, B. Neal, S. Bompoint, H.J.L. Heerspink, D.M. Charytan, R. Edwards, R. Agarwal, G. Bakris, S. Bull, C.P. Cannon, G. Capuano, P.-L. Chu, D. de Zeeuw, T. Greene, A. Levin, C. Pollock, D.C. Wheeler, Y. Yavin, H. Zhang, B. Zinman, G. Meininger, B.M. Brenner, and K.W. Mahaffey, for the CREDENCE Trial Investigators*

In this double-blind, randomized trial, we assigned patients with type 2 diabetes and albuminuric chronic kidney disease to receive canagliflozin, an oral SGLT2 inhibitor, at a dose of 100 mg daily or placebo. All the patients had an estimated glomerular filtration rate (GFR) of 30 to <90 ml per minute per 1.73 m^2 of body-surface area and albuminuria (ratio of albumin [mg] to creatinine [g], >300 to 5000) and were treated with renin–angiotensin system blockade. The primary outcome was a composite of end-stage kidney disease (dialysis, transplantation, or a sustained estimated GFR of <15 ml per minute per 1.73 m^2), a doubling of the serum creatinine level, or death from renal or cardiovascular causes. Prespecified secondary outcomes were tested hierarchically.

In patients with type 2 diabetes and kidney disease, the risk of kidney failure and cardiovascular events was lower in the canagliflozin group than in the placebo group at a median follow-up of 2.62 years. (Funded by Janssen Research and Development; CREDENCE ClinicalTrials.gov number, NCT02065791.)


A Primary Composite Outcome
Hazard ratio, 0.70 (95% CI, 0.59–0.82)
P=0.00001
Placebo
Canagliflozin
Patients with an Event (%)
Months since Randomization
No. at Risk
Placebo 2199 2178 2132 2047 1725 1129 621 170
Canagliflozin 2202 2181 2145 2081 1786 1211 646 196
B Renal-Specific Composite Outcome
Hazard ratio, 0.66 (95% CI, 0.53–0.81)
P<0.001
Placebo
Canagliflozin
Patients with an Event (%)
Months since Randomization
No. at Risk
Placebo 2199 2178 2131 2046 1724 1129 621 170
Canagliflozin 2202 2181 2144 2080 1786 1211 646 196
C End-Stage Kidney Disease
Hazard ratio, 0.68 (95% CI, 0.54–0.86)
P=0.002
Placebo
Canagliflozin
Patients with an Event (%)
Months since Randomization
No. at Risk
Placebo 2199 2182 2141 2063 1752 1152 641 178
Canagliflozin 2202 2182 2146 2091 1798 1217 654 199
D Dialysis, Kidney Transplantation, or Renal Death
Hazard ratio, 0.72 (95% CI, 0.54–0.97)
Placebo
Canagliflozin
Patients with an Event (%)
Months since Randomization
No. at Risk
Placebo 2199 2183 2147 2077 1776 1178 653 180
Canagliflozin 2202 2184 2148 2100 1811 1236 661 199
E Death from Cardiovascular Cause
Hazard ratio, 0.78 (95% CI, 0.61–1.00)
P=0.05
Placebo
Canagliflozin
Patients with an Event (%)
Months since Randomization
No. at Risk
Placebo 2199 2185 2160 2106 1818 1220 688 189
Canagliflozin 2202 2187 2155 2120 1835 1263 687 212
F Death from Any Cause
Hazard ratio, 0.83 (95% CI, 0.68–1.02)
Placebo
Canagliflozin
Patients with an Event (%)
Months since Randomization
No. at Risk
Placebo 2199 2185 2160 2106 1818 1220 688 189
Canagliflozin 2202 2187 2155 2120 1835 1263 687 212

SGLT2 Inhibitor Effects and Potential CV Impact

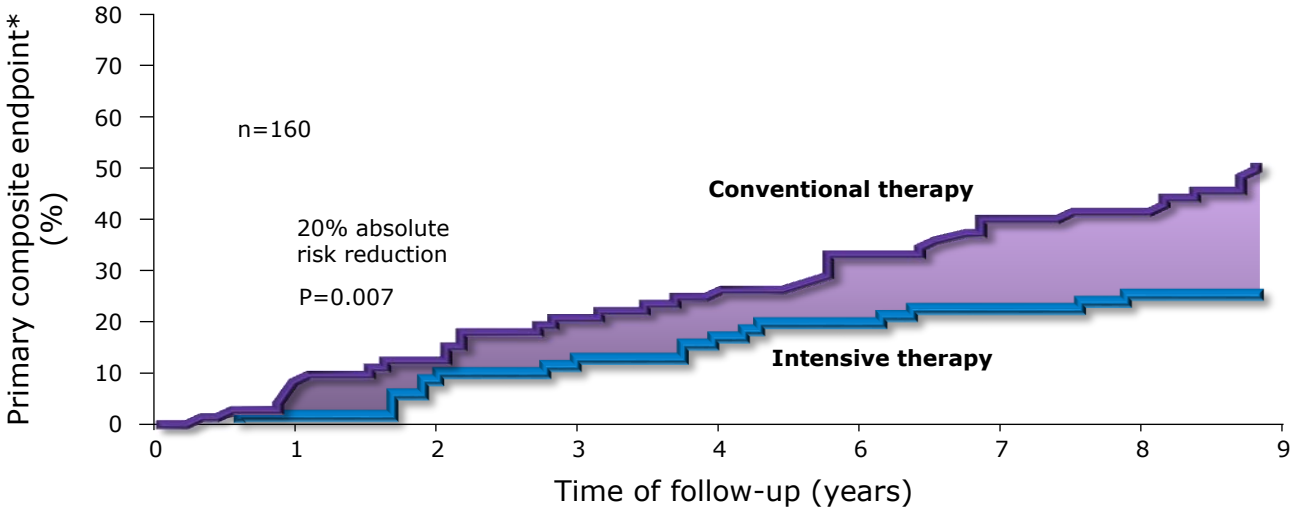


Inzucchi SE, et al. Diab Vasc Dis Res 2015;12:90–100

STENO-2: la gestione multifattoriale riduce significativamente il rischio di eventi CV

- Studio interventistico su diversi fattori di rischio e di confronto tra trattamento convenzionale vs intensivo in una popolazione con diabete di tipo II e ad alto rischio

Mean diabetes duration at baseline
= 5.5-6.0 years + 7.8 years' follow up



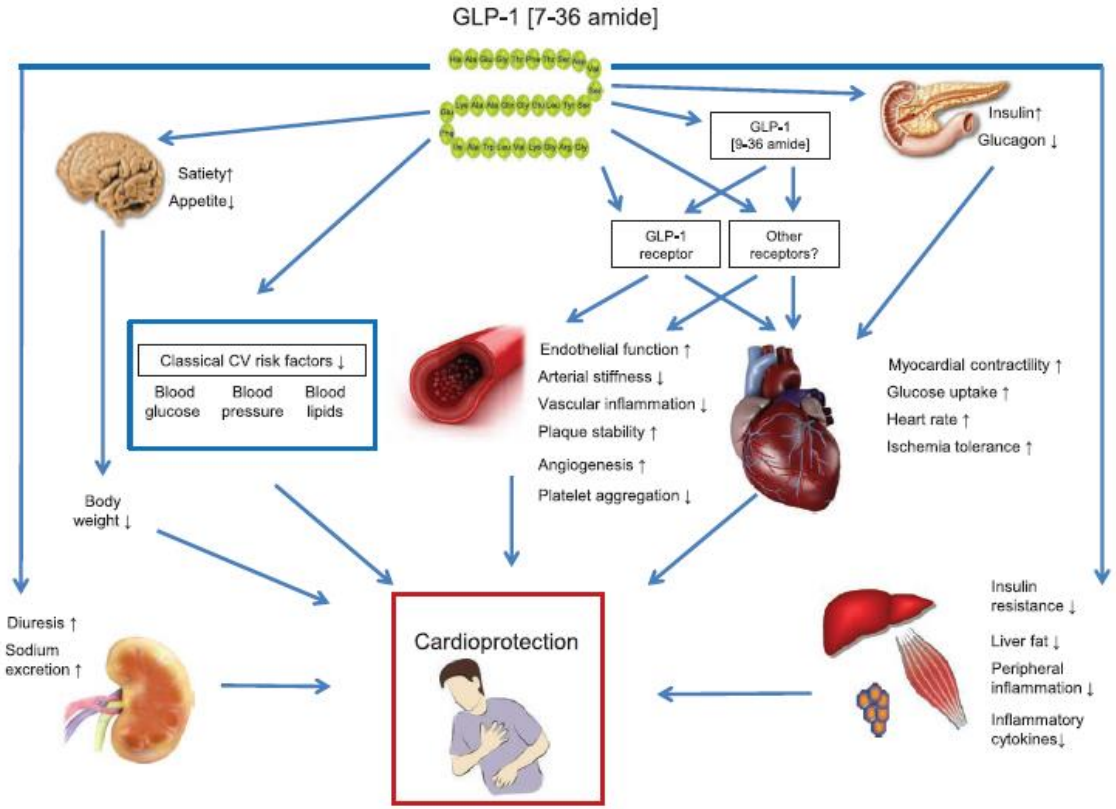
Conventional treatment was adminstered in accordance with national guidelines

Intensive therapy: stepwise implementation of behaviour modification and pharmacological therapy involving strict treatment goals that targeted hyperglycaemia, hypertension, dyslipidaemia, and microalbuminuria, with secondary prevention of CVD with aspirin

Primary composite endpoint: conventional therapy (44%) and intensive therapy (24%).
* Death from CV causes, non-fatal MI, CABG, PCI, non-fatal stroke, amputation, or surgery for peripheral atherosclerotic artery disease

Gaede P, et al. N Engl J Med. 2003;348:383-93.

Potential mechanisms mediating a beneficial effect of GLP-1 RAs on reducing CV events.

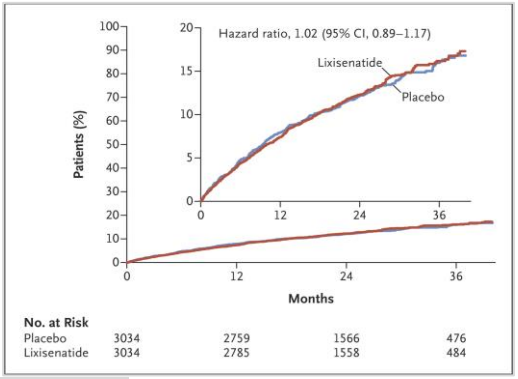


Nauck et al. Circulation. 2017;136:849–870

ELIXA

ORIGINAL ARTICLE

Lixisenatide in Patients with Type 2 Diabetes and Acute Coronary Syndrome

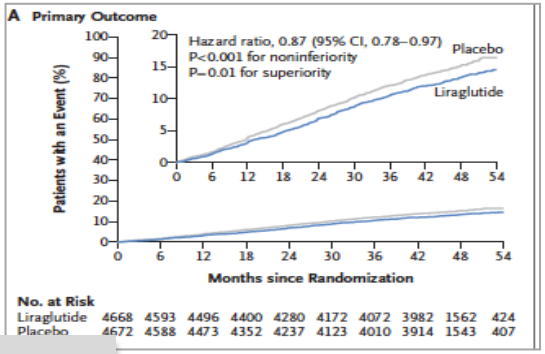


LEADER

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Liraglutide and Cardiovascular Outcomes in Type 2 Diabetes

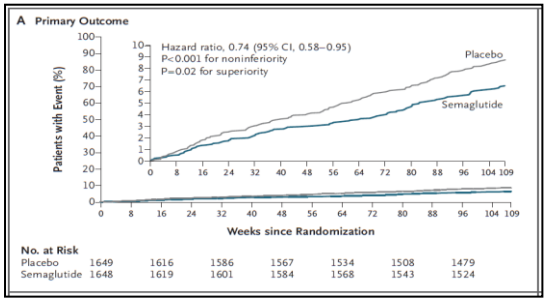


SUSTAIN 6

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Semaglutide and Cardiovascular Outcomes in Patients with Type 2 Diabetes

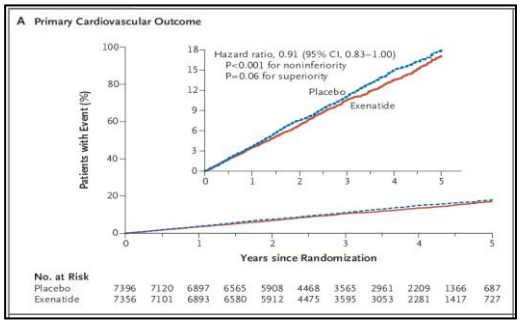


EXSCEL

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

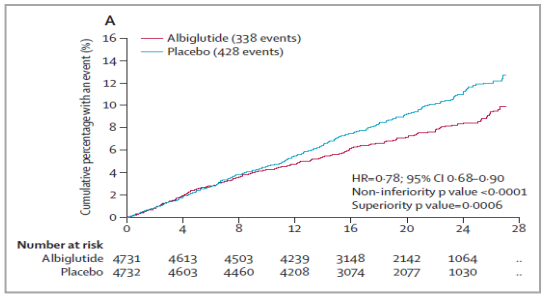
Effects of Once-Weekly Exenatide on Cardiovascular Outcomes in Type 2 Diabetes



HARMONY

Albiglutide and cardiovascular outcomes in patients with type 2 diabetes and cardiovascular disease (Harmony Outcomes): a double-blind, randomised placebo-controlled trial

Adrian F Hernandez, Jennifer B Green, Salim Janmohamed, Ralph B D'Agostino Sr, Christopher B Granger, Nigel P Jones, Lawrence A Leiter, Anne E Rosenberg, Kristina N Sigmon, Matthew C Somerville, Karl M Thorpe, John J V McMurray, Stefano Del Prato, for the Harmony Outcomes committees and investigators*

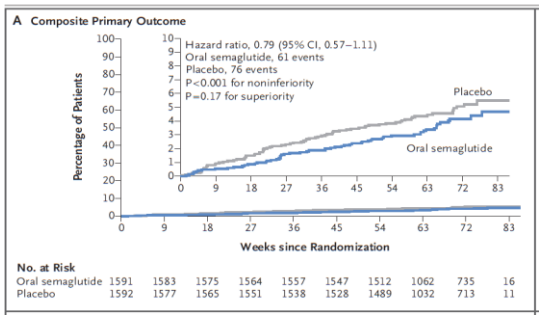


PIONEER 6

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Oral Semaglutide and Cardiovascular Outcomes in Patients with Type 2 Diabetes



REWIND

Articles

Dulaglutide and cardiovascular outcomes in type 2 diabetes (REWIND): a double-blind, randomised placebo-controlled trial

Hertzel C Gerstein, Helen M Colhoun, Gilles R Dagenais, Rafael Diaz, Mark Lakshmanan, P
Matthew C Riddle, Lars Rydén, Denis Xavier, Charles Messan Atisso, Leanne Dyal, Stephan
Alvaro Avezum, Jan Basile, Namsik Chung, Ignacio Conget, William C Cushman, Edward F
Petr Jansky, Matyas Keltai, Fernando Lanas, Lawrence A Leiter, Patricio Lopez-Jaramillo, E
Nana Pogosova, Peter J Raubenheimer, Jonathan E Shaw, Wayne H-H Sheu, Theodora Ter

	Dulaglutide (n=4949)		Placebo (n=4952)		Hazard ratio (95% CI)	p value
	Number of patients (%)	Incidence rate (number of events per 100 person-years)	Number of patients (%)	Incidence rate (number of events per 100 person-years)		
Primary composite outcome	594 (12·0%)	2·35	663 (13·4%)	2·66	0·88 (0·79–0·99)*	0·026
Myocardial infarction	223 (4·5%)	0·87	231 (4·7%)	0·91	0·96 (0·79–1·15)	0·63
Non-fatal myocardial infarction	205 (4·1%)	0·80	212 (4·3%)	0·84	0·96 (0·79–1·16)	0·65
Fatal myocardial infarction	26 (0·5%)	0·10	20 (0·4%)	0·08	1·29 (0·72–2·30)	0·40
Stroke	158 (3·2%)	0·61	205 (4·1%)	0·81	0·76 (0·62–0·94)	0·010
Non-fatal stroke	135 (2·7%)	0·52	175 (3·5%)	0·69	0·76 (0·61–0·95)	0·017
Fatal stroke	26 (0·5%)	0·10	33 (0·7%)	0·13	0·78 (0·47–1·30)	0·34
Cardiovascular death†	317 (6·4%)	1·22	346 (7·0%)	1·34	0·91 (0·78–1·06)	0·21
Non-cardiovascular death	219 (4·4%)	0·84	246 (5·0%)	0·95	0·88 (0·73–1·06)	0·18
All-cause death	536 (10·8%)	2·06	592 (12·0%)	2·29	0·90 (0·80–1·01)	0·067
Hospital admission for heart failure or urgent visit	213 (4·3%)	0·83	226 (4·6%)	0·89	0·93 (0·77–1·12)	0·46
Hospital admission for unstable angina	88 (1·8%)	0·34	77 (1·6%)	0·30	1·14 (0·84–1·54)	0·41
Composite microvascular outcome (eye or renal outcome)	910 (18·4%)	3·76	1019 (20·6%)	4·31	0·87 (0·79–0·95)	0·0020
Eye outcome‡	95 (1·9%)	0·37	76 (1·5%)	0·30	1·24 (0·92–1·68)	0·16
Renal outcome§	848 (17·1%)	3·47	970 (19·6%)	4·07	0·85 (0·77–0·93)	0·0004

All hazard ratios (HRs) were estimated with Cox proportional hazards models and p values are two-sided. *After accounting for α=0·009 spent on the primary outcome for the interim analysis, the α for the final analysis is 0·0467, and the HR is 0·88 (95·33% CI 0·79–0·99). †Includes deaths of unknown cause. ‡Photocoagulation, anti-vascular endothelial growth factor therapy, or vitrectomy. §New macroalbuminuria, a sustained decline in estimated glomerular filtration rate of 30% or more from baseline, or chronic renal replacement therapy.

Table 2: Primary and secondary outcomes

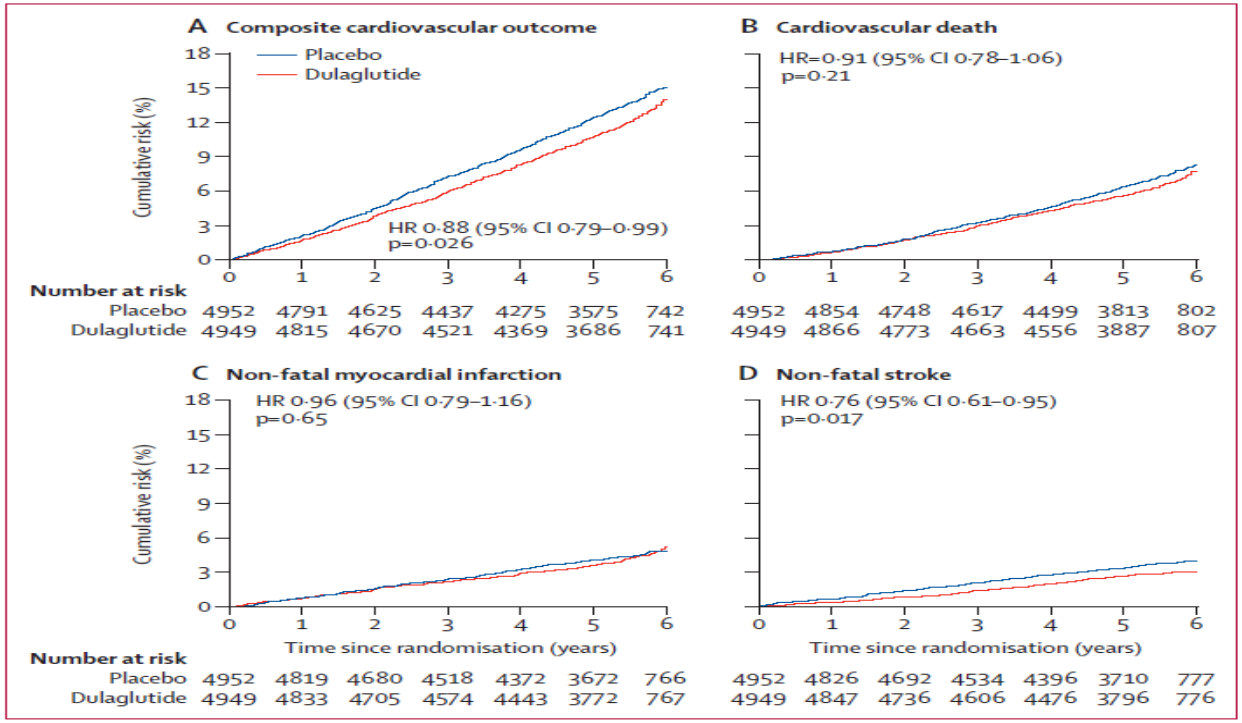


Figure 2: Cumulative incidence of cardiovascular outcomes
HR=hazard ratio. HbA_{1c}=glycated haemoglobin A_{1c}.

Table 7 Cardiovascular risk categories in patients with diabetes[a]

Very high risk	Patients with DM **and** established CVD **or** other target organ damage[b] **or** three or more major risk factors[c] **or** early onset T1DM of long duration (>20 years)
High risk	Patients with DM duration ≥10 years without target organ damage plus any other additional risk factor
Moderate risk	Young patients (T1DM aged <35 years or T2DM aged <50 years) with DM duration <10 years, without other risk factors

CV = cardiovascular; CVD = cardiovascular disease; DM = diabetes mellitus; T1DM = type 1 diabetes mellitus; T2DM = type 2 diabetes mellitus.

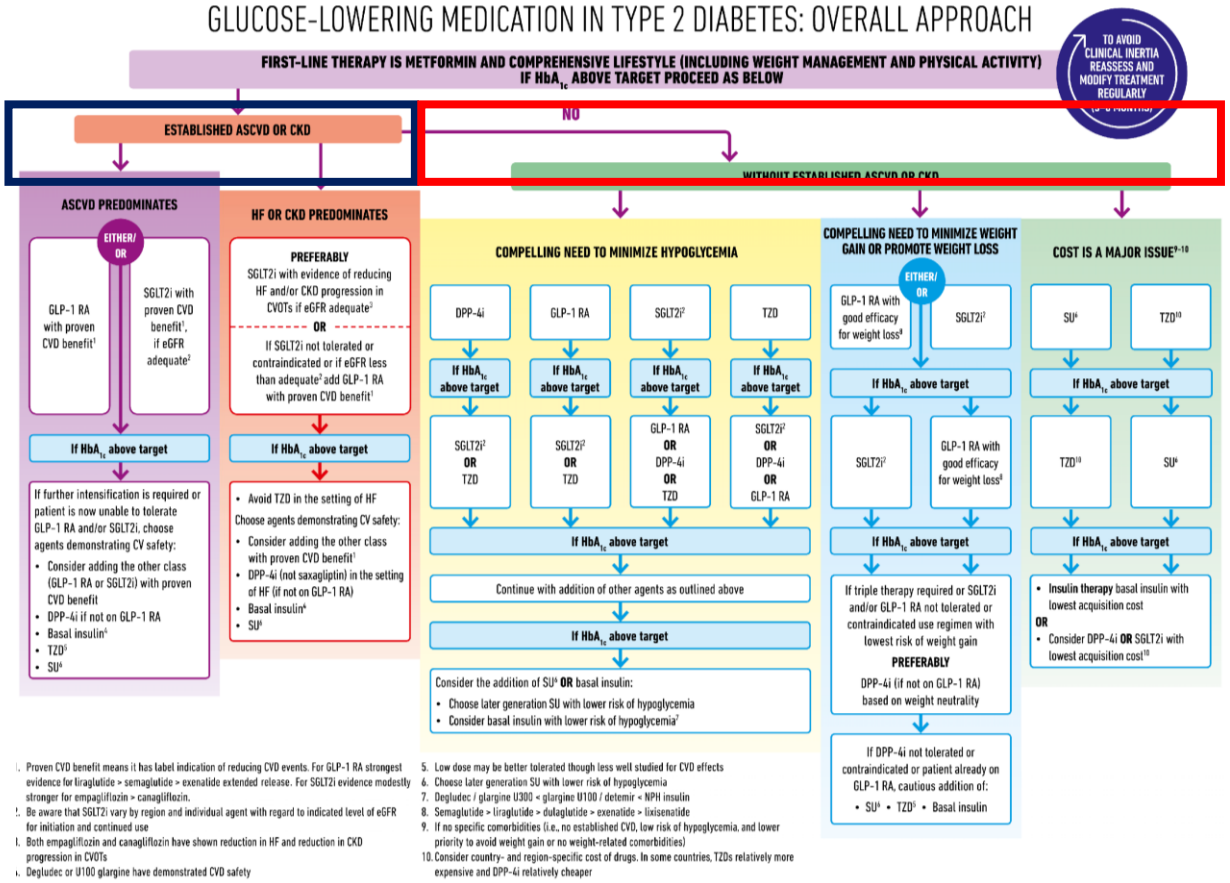
[a]Modified from the 2016 European Guidelines on cardiovascular disease prevention in clinical practice.[27]

[b]Proteinuria, renal impairment defined as eGFR ≥30 mL/min/1.73 m^2, left ventricular hypertrophy, or retinopathy.

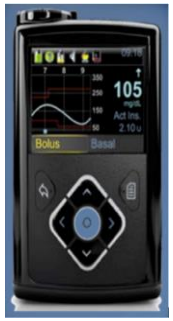
[c]Age, hypertension, dyslipidemia, smoking, obesity.

Le linee guida chiariscono con puntualità come le terapie innovative (**SGLT2i e GLP1 RA in primis**) siano da preferire in qualsiasi setting terapeutico.

In prevenzione secondaria: **SGLT2i, GLP1 RA** sono scelta preferenziale



In prevenzione primaria: **SGLT2i, GLP1 RA**, DPP4i e TZD sono scelta preferenziale

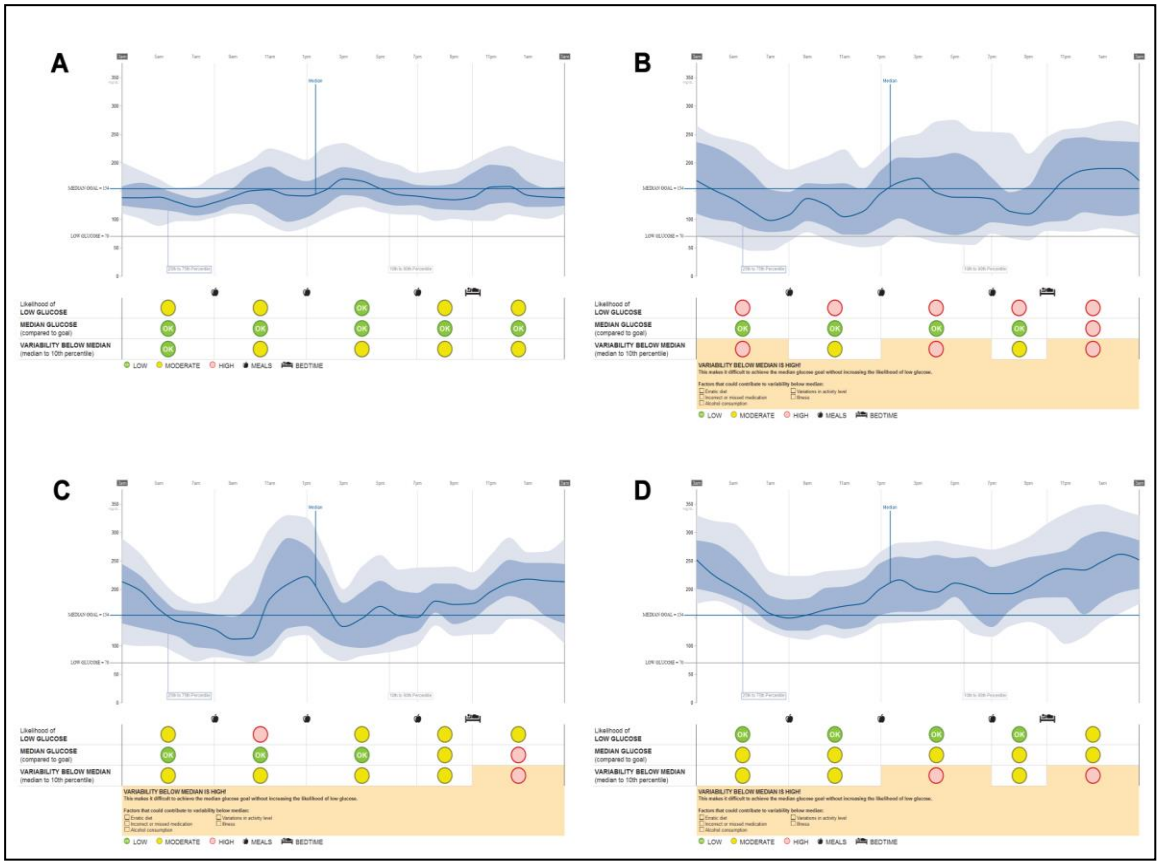


-Glicemia discontinua
-A richiesta
-Glicemia capillare
-Senza allarmi
-Senza frecce di tendenza
-Senza grafico della glicemia

-Glicemia continua
-Senza richiesta
-Glicemia interstiziale
-Con allarmi
-Con fecce di tendenza
-Con grafico della glicemia

L’AGP fornisce informazioni non visibili con HbA1C

Quattro donne con diabete T1, terapia CS II, A1c = da 7,6 a 7.7% (da 60 a 61 mmol/mol)

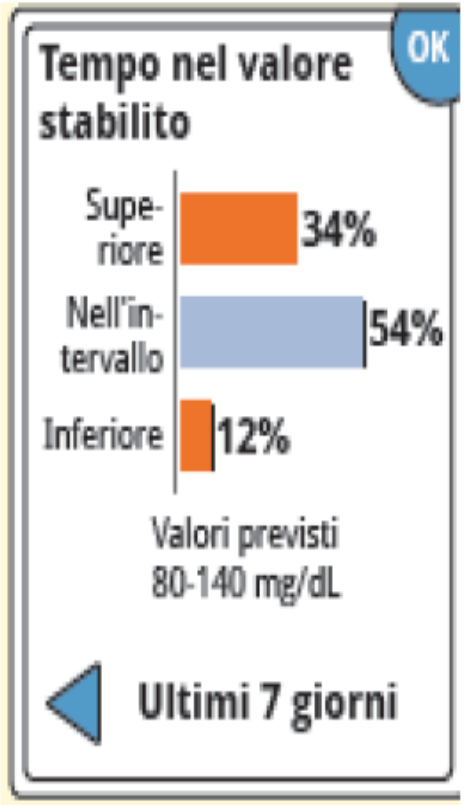


Dunn TC, Hayter GA, Doniger KJ, Wolpert HA. J Diabetes Science and Tech 8(4), 2014.

Tempo nel valore stabilito

Un grafico che mostra la percentuale di tempo in cui i valori del glucosio rilevati dal sensore erano **sopra, sotto o entro l'intervallo stabilito del glucosio**.

- Mostra la percentuale di tempo sopra, sotto o entro l'intervallo stabilito del glucosio che viene riportato in basso.
- Questo rapporto del lettore può mostrare gli ultimi 7, 14, 30 o 90 giorni †

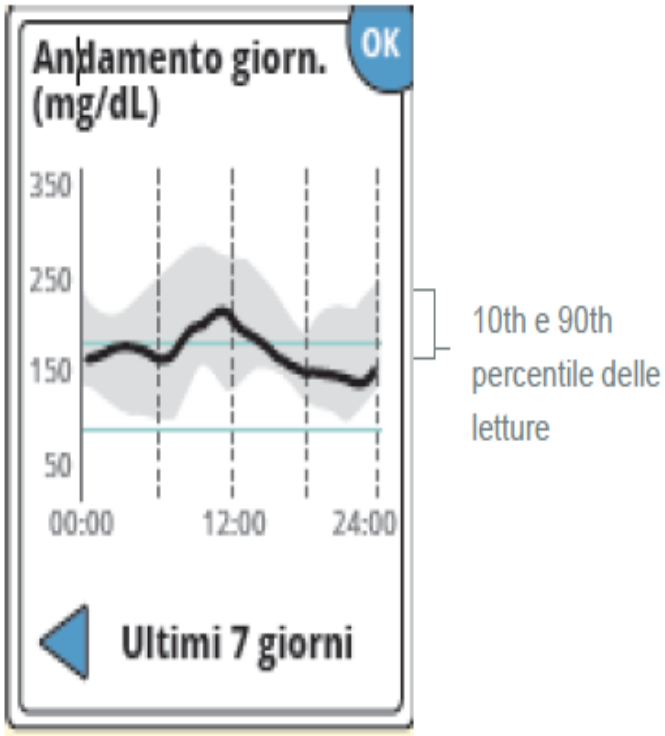


Maggiori informazioni sui valori alti e bassi possono motivare i pazienti per ottenere più letture entro il valore stabilito.

Andamento giornaliero

Questo rapporto mostra quando i pazienti rientrano **nell'intervallo di glucosio stabilito e la variabilità dei loro livelli di glucosio**

- Le linee orizzontali definiscono l'intervallo stabilito di glucosio impostato
- La linea nera mostra la mediana dei valori del glucosio. Il 50% delle letture sono sopra ed il 50% sono sotto questa linea
- L'ombreggiatura grigia mostra dove rientra l'80% delle letture di glucosio fra il 10°e il 90° percentile.
- Questo rapporto del lettore può mostrare gli andamenti degli ultimi 7, 14, 30 o 90 giorni †

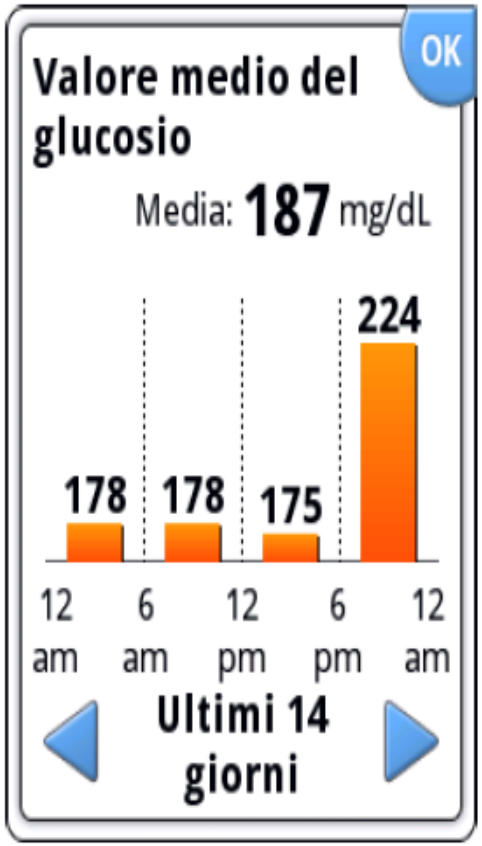


Mostra la variabilità giornaliera dei livelli di glucosio insiema ad una veloce visuale della percentuale dei valori di glucosio entro l'intervallo.

Valore medio del glucosio

Questo rapporto mostra la media dei valori del glucosio per 4 periodi diversi di 6 ore della giornata insieme alla media complessiva in alto.

- Le letture sopra o sotto l'intervallo stabilito del glucosio del paziente sono arancione, mentre le letture nell'intervallo stabilito del glucosio sono blu
- Questo rapporto del lettore può mostrare le medie degli ultimi 7, 14, 30 o 90 giorni †



Un rapporto aggregato che mostra le differenze dei valori del glucosio del paziente in ore diverse

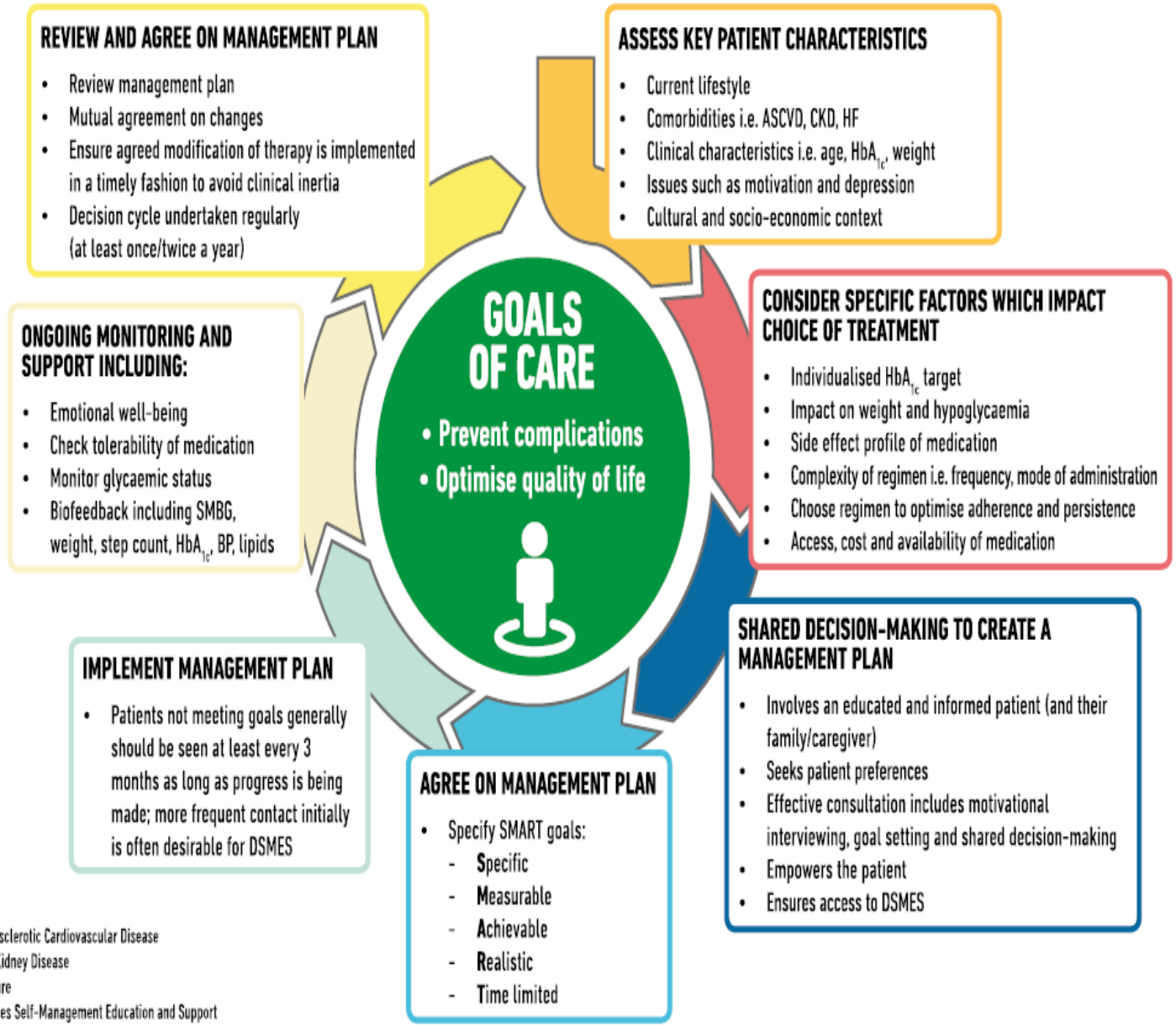
Eventi di glucosio basso

Il numero totale di eventi di glucosio basso sono visualizzati in forma di grafico a barre che mostra **il numero di eventi di glucosio basso** in quattro periodi diversi di ore del giorno.

- Eventi di glucosio basso vengono registrati quando il valore del glucosio è inferiore a 70 mg/dL per più di 15 minuti.
- Questo rapporto del lettore può mostrare gli ultimi 7, 14, 30 o 90 giorni †

Maggiori informazioni sui valori bassi e quando si verificano possono aiutare i pazienti a gestire meglio il glucosio.

DECISION CYCLE FOR PATIENT-CENTRED GLYCAEMIC MANAGEMENT IN TYPE 2 DIABETES



ASCVD = Atherosclerotic Cardiovascular Disease
CKD = Chronic Kidney Disease
HF = Heart Failure
DSMES = Diabetes Self-Management Education and Support
SMBG = Self-Monitored Blood Glucose

Fig. 1 Decision cycle for patient-centred glycaemic management in type 2 diabetes

Davies M et al. Diabetologia. 2018 Dec;61(12):2461-2498