Medidas que reducen mortalidad en DM

Dr. Chih Hao Chen Ku, FACE
Servicio de Endocrinología, Hospital San Juan de Dios
Departamento de Farmacología y Toxicología Clínica, Universidad de Costa Rica

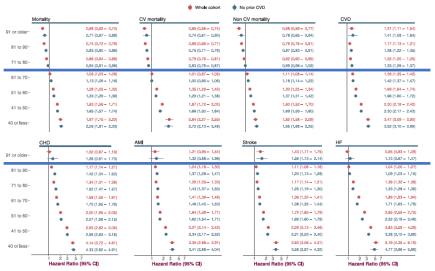
Conflictos de interés

- Conferencista: Astra Zeneca, Abbott Nutrición, Novartis, Novo Nordisk, Merck Sharp & Dohme, Roche, Glaxo SmithKline, Sanofi Aventis, Bayer, Pfizer
- Advisory Board: Novartis Oncology, Sanofi Aventis, Astra Zeneca, Novo Nordisk, Stendhal, Pfizer
- Investigación clínica: Astra Zeneca, Novartis Pharma Logistics Inc., Merck Sharp & Dohme, Glaxo SmithKline, Organon, Boehringer Ingelheim, Roche, Novo Nordisk

Agenda

- DM y enfermedad cardiovascular
- Medidas que reducen mortalidad CV en DM (basados en RCT):
  - Estatinas
  - Antihipertensivos
  - Antiagregantes?
  - Antidiabéticos
- Basados en estudios observacionales:
  - Cirugía bariátrica
  - Vacunación

Edad dx de DM: mortalidad y eventos CV



Sattar N. Circulation. 2019;139.

Pérdida de esperanza de vida

- Edad de diagnóstico:
  - 15 años: pérdida de 12 años
  - 45 años: pérdida de 6 años
  - 65 años: pérdida de 2 años
  - Más de 80 años: no pérdida

Sattar N. Circulation. 2019;139.

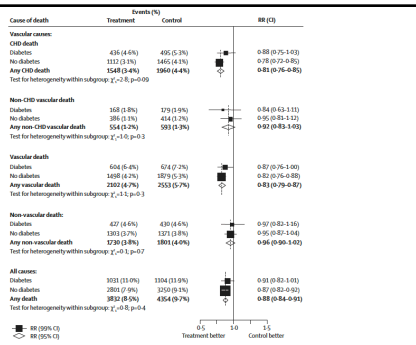
Conclusiones

- En personas jóvenes, el foco es sobre todo instaurar medidas que reducen especialmente eventos y mortalidad cardiovascular
- En adultos de más de 70-80 años de edad, además de las medidas cardiovasculares, se debe pensar también en otras medidas como vacunas
- Las medidas que reducen eventos cardiovasculares deben instaurarse en todas las edades

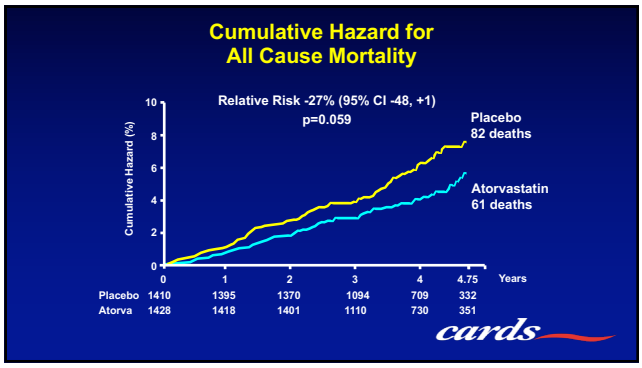
Evidencia basado en ensayos clínicos aleatorizados

Medidas extraglicémicas

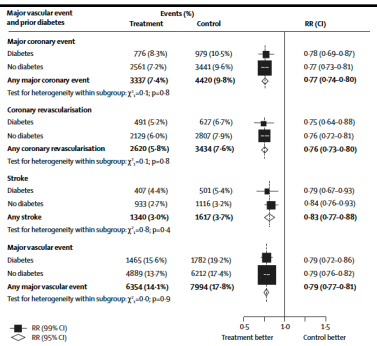
Metanálisis estatinas y mortalidad



CTT collaborators. Lancet. 2008;371:117



Metanálisis estatinas en DM

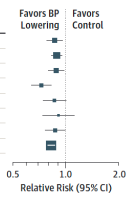


CTT collaborators. Lancet. 2008;371:117

Metanálisis: reducción de PA en DM

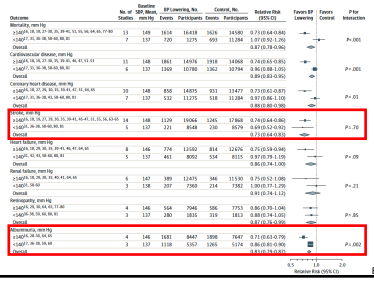
Figure 2. Standardized Associations Between 10-mm Hg Lower Systolic BP and All-Cause Mortality, Macrovascular Outcomes, and Microvascular Outcomes in Diabetic Patients

Outcome	No. of Studies	BP Lowering Events	BP Lowering Participants	Control Events	Control Participants	Relative Risk (95% CI)
Mortality	20	2334	27693	2319	25864	0.87 (0.78-0.96)
Cardiovascular disease	17	3230	25756	3280	24862	0.89 (0.83-0.95)
Coronary heart disease	17	1390	26150	1449	24761	0.88 (0.80-0.98)
Stroke	19	1350	27614	1475	26447	0.73 (0.64-0.83)
Heart failure	13	1235	21684	1348	20791	0.86 (0.74-1.00)
Renal failure	9	596	19835	560	18912	0.91 (0.74-1.12)
Retinopathy	7	844	9781	905	9566	0.87 (0.76-0.99)
Albuminuria	7	2799	13804	3163	12821	0.83 (0.79-0.87)



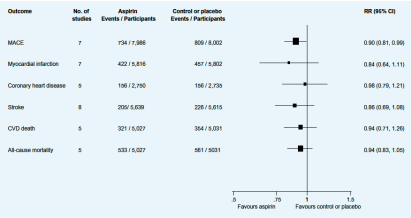
Emdin CA. JAMA. 2015;313:603

Reducción de eventos según PA inicial



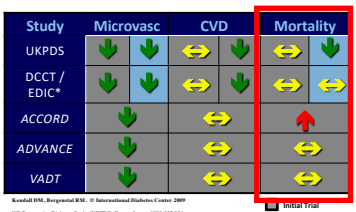
Emdin CA. JAMA. 2015;313:603

Aspirina y mortalidad en prevención primaria en DM



Kunutsor SK. Diab Med. 2017;34:316

Impact of Intensive Therapy for Diabetes: Summary of Major Clinical Trials



Kendall DM, Bergenstal RM. © International Diabetes Center 2009

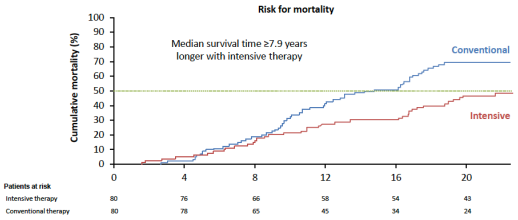
UK Prospective Diabetes Study (UKPDS) Group. *Lancet* 1998;352:854.
Holman RR *et al. N Engl J Med.* 2008;359:1577. DCCT Research Group. N Engl J Med 1993;329:977.
Nathan DM *et al. N Engl J Med.* 2005;353:2643. Gerstein HC *et al. N Engl J Med.* 2008;358:2545.
Punzi A *et al.* N Engl J Med 2008;358:2560. Duckworth W *et al.* N Engl J Med 2009;360:129. (erratum: Moritz T. *N Engl J Med* 2009;361:1024)

Initial Trial
Long Term Follow-up
* in T1DM

EndoDrChen.com

Intensified multifactorial intervention reduces mortality risk

Steno-2 study: randomised controlled trial of intensified vs conventional multifactorial treatment in patients with T2D and microalbuminuria



*Death from CV causes, non-fatal MI, coronary-artery bypass grafting, percutaneous coronary intervention, non-fatal stroke, amputation or surgery for peripheral atherosclerotic artery disease

Gaede P *et al. Diabetologia* 2016; 59: 2298-307

Antidiabéticos

Metformin in Overweight Patients

- compared with conventional policy

32% risk reduction in any diabetes-related endpoints p=0.002

3

42% risk reduction in diabetes-related deaths p=0.017

36% risk reduction in all cause mortality p=0.011

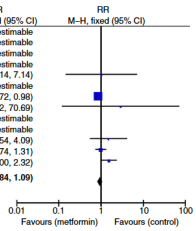
39% risk reduction in myocardial infarction p=0.01

ukpds

Metanálisis: metformin y mortalidad total

Study or subgroup	Metformin Events	Metformin Total	Control Events	Control Total	Weight	RR M–H, fixed (95% CI)
Chiasson et al (2001a) [24]	0	83	0	83		Not estimable
Chiasson et al (2001b) [24]	0	76	0	82		Not estimable
DeFronzo et al (1995a) [25]	0	143	0	146		Not estimable
DeFronzo et al (1995b) [25]	0	213	0	209		Not estimable
Gram et al (2011) [23]	2	184	2	187	0.7 %	1.02 (0.14, 7.14)
Hermann et al (2001) [20]	0	16	0	15		Not estimable
Holman et al (2008) [21]	152	342	217	411	65.7 %	0.84 (0.72, 0.98)
Horton et al (2000a) [26]	1	178	0	172	0.2 %	2.90 (0.12, 70.69)
Horton et al (2000b) [26]	0	135	0	134		Not estimable
Hällsten et al (2002) [19]	0	13	0	14		Not estimable
Kooy et al (2009) [22]	9	196	6	194	2.0 %	1.48 (0.54, 4.09)
Rachmani et al (2002) [27]	62	195	64	198	21.2 %	0.98 (0.74, 1.31)
UKPDS (1998) [12]	47	268	31	269	10.3 %	1.52 (1.00, 2.32)
Total (95% CI)		**2042**		**2114**	**100.0 %**	**0.96 (0.84, 1.09)**
Total events	273		320			

Heterogeneity: $\chi^2 = 8.76$, $df = 5$ ($p = 0.12$); $I^2 = 43\%$
Test for overall effect: $Z = 0.64$ ($p = 0.52$)

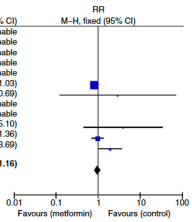


Griffin Sj. Diabetologia. 2017;60:1620

Metanálisis: metformin y mortalidad cardiovascular

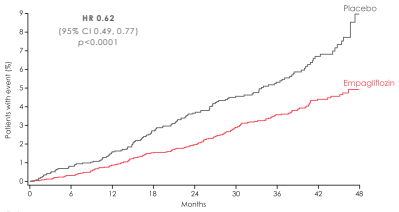
Study or subgroup	Metformin Events	Metformin Total	Control Events	Control Total	Weight	RR M–H, fixed (95% CI)
Chiasson et al (2001a) [24]	0	83	0	83		Not estimable
Chiasson et al (2001b) [24]	0	76	0	82		Not estimable
DeFronzo et al (1995a) [25]	0	143	0	146		Not estimable
DeFronzo et al (1995b) [25]	0	213	0	209		Not estimable
Hermann et al (2001) [20]	0	16	0	15		Not estimable
Holman et al (2008) [21]	81	342	120	411	62.3 %	0.81 (0.64, 1.03)
Horton et al (2000a) [26]	1	178	0	172	0.3 %	2.90 (0.12, 70.69)
Horton et al (2000b) [26]	0	135	0	134		Not estimable
Hällsten et al (2002) [19]	0	13	0	14		Not estimable
Kooy et al (2009) [22]	4	196	1	194	0.6 %	3.96 (0.45, 35.10)
Rachmani et al (2002) [27]	50	195	52	198	29.5 %	0.98 (0.70, 1.36)
UKPDS (1998) [12]	25	268	13	269	7.4 %	1.93 (1.01, 3.69)
Total (95% CI)		**1858**		**1927**	**100.0 %**	**0.97 (0.80, 1.16)**
Total events	161		186			

Heterogeneity: $\chi^2 = 8.44$, $df = 4$ ($p = 0.08$); $I^2 = 53\%$
Test for overall effect: $Z = 0.36$ ($p = 0.72$)



Griffin Sj. Diabetologia. 2017;60:1620

CV death

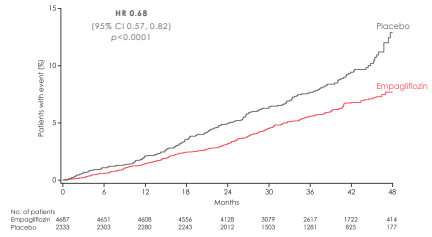


No. of patients									
Empagliflozin	4687	4651	4608	4556	4128	3079	2617	1722	414
Placebo	2333	2303	2280	2243	2012	1503	1281	825	177

Cumulative incidence function. HR, hazard ratio

EMPA-REG OUTCOME®

All-cause mortality

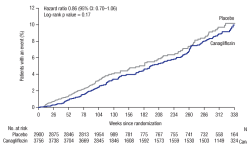


Kaplan-Meier estimate. HR, hazard ratio

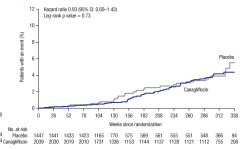
EMPA-REG OUTCOME®

CANVAS: CV Death

Secondary Prevention



Primary Prevention

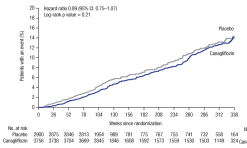


Mahaffey KW, et al. Circulation. 2017. doi:10.1161/CIRCULATIONAHA.117.032038.

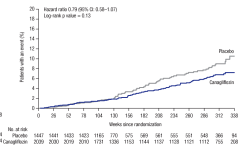
CANVAS Program

CANVAS: All-cause Mortality

Secondary Prevention



Primary Prevention

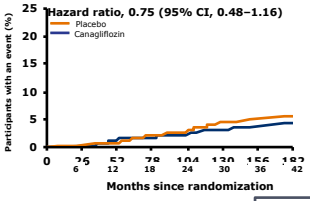


Mahaffey KW, et al. Circulation. 2017. doi:10.1161/CIRCULATIONAHA.117.032038.

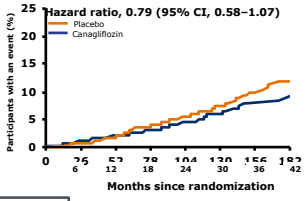
CANVAS Program

CREDENCE: CV Death

Primary Prevention



Secondary Prevention



P interaction = 0.86

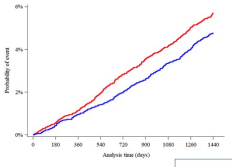
Mahaffey KW, et al. Circulation. 2017. doi:10.1161/CIRCULATIONAHA.117.032038.

CANVAS Program

Primary Endpoints

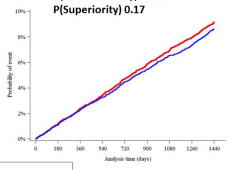
CVD/HHF

4.9% vs 5.8%
HR 0.83 (0.73-0.95)
P(Superiority) 0.005



MACE

8.8% vs 9.4%
HR 0.93 (0.84-1.03)
P(Noninferiority) <0.001
P(Superiority) 0.17



Dapagliflozin
Placebo

BRIGHAM HEALTH
BRIGHAM AND WOMEN'S HOSPITAL
HARVARD MEDICAL SCHOOL TEACHING HOSPITAL

Endpoints and Components

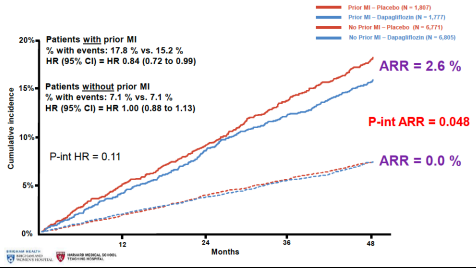
	Dapagliflozin rate/1000 patient-yr	Placebo rate/1000 patient-yr	Hazard Ratio (95% CI)	P value
CV death/HHF	12.2	14.7	0.83 (0.73-0.95)	0.005*
MACE	22.6	24.2	0.93 (0.84-1.03)	<0.001** 0.17*
40% decrease in eGFR to <60 ml/min/m2, ESRD, or renal or CV death	10.8	14.1	0.76 (0.67-0.87)	
All-cause death	15.1	16.4	0.93 (0.82-1.04)	
HHF	6.2	8.5	0.73 (0.61-0.88)	
Myocardial infarction	11.7	13.2	0.89 (0.77-1.01)	
Ischemic Stroke	6.9	6.8	1.01 (0.84-1.21)	
CV death	7.0	7.1	0.98 (0.82-1.17)	
Non-CV death	6.0	6.8	0.88 (0.73-1.06)	
40% decrease in eGFR to <60 ml/min/m2, ESRD, or renal death	3.7	7.0	0.53 (0.43-0.66)	

BRIGHAM HEALTH
BRIGHAM AND WOMEN'S HOSPITAL
HARVARD MEDICAL SCHOOL TEACHING HOSPITAL

*P for superiority, **P for non-inferiority

CV outcomes with dapagliflozin

MACE – CV death, MI or ischemic stroke



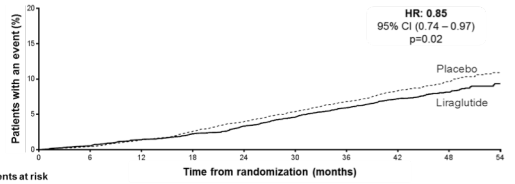
Outcomes by Different EF

		KM rate (%) Dapa	KM rate (%) Placebo	HR (95% CI)	P trend for interaction
CV death / HHF	EF <30%	22.1	44.7	0.45 (0.23-0.87)	0.039
	EF 30-<45	17.0	23.2	0.68 (0.47-1.00)	
	EF 45-<55	10.2	12.0	0.83 (0.58-1.20)	
	EF ≥55	5.8	6.4	0.89 (0.68-1.16)	
HHF	EF <30%	19.3	40.4	0.41 (0.19-0.85)	0.084
	EF 30-<45	12.1	14.2	0.76 (0.47-1.23)	
	EF 45-<55	6.7	8.8	0.76 (0.48-1.19)	
	EF ≥55	3.9	4.1	0.89 (0.64-1.24)	
CV death	EF <30%	5.0	10.9	0.39 (0.12-1.29)	0.049
	EF 30-<45	7.7	12.8	0.60 (0.35-1.02)	
	EF 45-<55	5.4	4.3	1.18 (0.69-2.01)	
	EF ≥55	2.5	2.6	1.05 (0.70-1.57)	
All-cause death	EF <30%	9.8	17.1	0.52 (0.21-1.33)	0.026
	EF 30-<45	11.7	17.9	0.64 (0.41-0.99)	
	EF 45-<55	8.6	8.6	0.98 (0.66-1.46)	
	EF ≥55	5.7	5.4	1.02 (0.78-1.32)	

0.1 Favors dapa 1 Favors placebo 10

13

All-cause death



Patients at risk										
Liraglutide	4668	4641	4599	4558	4505	4445	4382	4322	1723	484
Placebo	4672	4648	4601	4546	4479	4407	4338	4268	1709	465

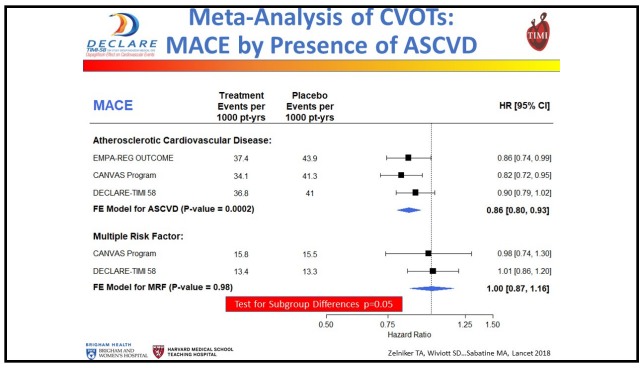
LEADER®

The cumulative incidences were estimated with the use of the Kaplan–Meier method, and the hazard ratios with the use of the Cox proportional-hazard regression model. The data analyses are truncated at 54 months, because less than 10% of the patients had an observation time beyond 54 months. CI: confidence interval; HR: hazard ratio.

Presented at the American Diabetes Association 76th Scientific Sessions, Session 3-CT-SY24, June 13 2016, New Orleans, LA, USA.

Estudio	MACE	IAM no fatal	Ictus no fatal	Mortalidad CV	Mortalidad total	Hospitalización por falla cardíaca
Inhibidores de DPP4						
SAVOR (saxagliptina)	1.00 (0.89-1.12)	0.95 (0.80-1.12)	1.11 (0.88-1.39)	1.03 (0.87-1.22)	1.11 (0.96-1.27)	1.27 (1.07-1.51)
EXAMINE (alogliptina)	0.96 (<1.16)	1.08 (0.88-1.33)	0.91 (<1.14)	0.85 (0.66-1.10)	0.88 (0.71-1.09)	1.07 (0.79-1.46)
TECOS (sitagliptina)	0.99 (0.89-1.11)	0.95 (0.81-1.11) *	0.97 (0.79-1.19) *	1.03 (0.89-1.19)	1.01 (0.90-1.14)	1.00 (0.83-1.20)
CARMELINA (linagliptina)	1.02 (0.89-1.17)	1.15 (0.91-1.45)	0.88 (0.63-1.23)	0.96 (0.81-1.14)	0.98 (0.84-1.13)	0.90 (0.74-1.08)
Otros						
PROACTIVE (pioglitazone)	0.84 (0.72-0.98) $	0.83 (0.65-1.06)	0.81 (0.61-1.07)	NS	0.96 (0.78-1.18)	1.23 #
TOSCA-IT @ (sulfonilureas)	0.96 (0.74-1.26) i	0.87 (0.48-1.55)	0.79 (0.41-1.53)	NA	1.10 (0.75-1.61)	NS
ORIGIN (insulina glargine)	1.02 (0.94-1.11)	1.02 (0.88-1.19)*	1.03 (0.89-1.21)*	1.00 (0.89-1.13)	0.98 (0.90-1.08)	0.90 (0.77-1.05)
DEVOTE (insulina degludec)	0.91 (0.78-1.06)	0.85 (0.68-1.06)	0.90 (0.65-1.23)	0.96 (0.76-1.21)	0.91 (0.76-1.11)	NA

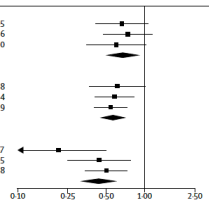
Estudio	MACE	IAM no fatal	Ictus no fatal	Mortalidad CV	Mortalidad total	Hospitalización por falla cardíaca
Inhibidores de SGLT2						
EMPAREG (empagliflozina)	0.86 (0.74-0.99)	0.87 (0.70-1.09)	1.24 (0.92-1.67)	0.62 (0.49-0.77)	0.68 (0.57-0.82)	0.65 (0.5-0.85)
CANVAS (canagliflozina)	0.86 (0.75-0.97)	0.85 (0.69-1.05)	0.90 (0.71-1.15)	0.87 (0.72-1.06)	0.87 (0.74-1.01)	0.67 (0.52-0.87)
DECLARE (dapagliflozina)	0.93 (0.84-1.03)	0.89 (0.77-1.01)	1.01 (0.84-1.21)	0.98 (0.82-1.17)	0.93 (0.82-1.04)	0.73 (0.61-0.88)
Análogos de GLP1						
ELIXA (lixisenatide)	1.02 (0.89-1.17) &	1.03 (0.87-1.22)	1.12 (0.79-1.58)	0.98 (0.78-1.22)	0.94 (0.78-1.13)	0.96 (0.75-1.23)
LEADER (liraglutide)	0.87 (0.76-0.97)	0.88 (0.75-1.03)	0.89 (0.72-1.11)	0.78 (0.66-0.93)	0.85 (0.74-0.97)	0.87 (0.73-1.05)
SUSTAIN-6 (semaglutide SC)	0.74 (0.58-0.95)	0.74 (0.51-1.08)	0.61 (0.38-0.99)	0.98 (0.65-1.48)	1.05 (0.74-1.50)	1.11 (0.77-1.61)
PIONEER-6 (semaglutide oral)	0.79 (0.57-1.11)	1.18 (0.73-1.90)	0.74 (0.35-1.57)	0.49 (0.27-0.92)	0.51 (0.31-0.84)	0.86 (0.48-1.55)
EXSCEL (exenatide)	0.91 (0.83-1.00)	0.95 (0.84-1.09)	0.86 (0.70-1.07)	0.88 (0.73-1.05)	0.86 (0.77-0.97)	0.94 (0.78-1.13)
HARMONY (albiglutide)	0.78 (0.68-0.90)	0.75 (0.61-0.90)	0.86 (0.66-1.14)	0.93 (0.73-1.19)	0.93 (0.73-1.19)	0.95 (0.79-1.16)
REWIND (dulaglutide)	0.88 (0.79-0.99)	0.96 (0.79-1.15)	0.75 (0.61-0.95)	0.91 (0.78-1.06)	0.90 (0.80-1.01)	0.93 (0.77-1.12)



Desenlace renal compuesto

A

	Patients: Treatment (n/N)	Patients: Placebo (n/N)	Events	Events per 1000 patient-years: Treatment	Events per 1000 patient-years: Placebo	Weight (%)	HR (95% CI)
eGFR <60 mL/min per m²							
EMPA-REG OUTCOME	1196/1801	605/1801	NA	NA	NA	33·5	0·66 (0·41-1·07)
CANVAS Program	NA/2039	NA/2039	83	11·4	15·1	39·6	0·74 (0·48-1·15)
DECLARE-TIMI 58	606/1265	659/1265	59	8·9	15·2	27·0	0·60 (0·35-1·02)
Fixed effects model for eGFR <60 (p=0·0054)							**0·67 (0·51-0·89)**
eGFR 60 to <90 mL/min per m²							
EMPA-REG OUTCOME	2406/3638	1232/3638	NA	NA	NA	16·8	0·61 (0·37-1·03)
CANVAS Program	NA/5625	NA/5625	118	4·6	7·4	34·4	0·58 (0·41-0·84)
DECLARE-TIMI 58	3838/7732	3894/7732	186	4·2	7·8	48·9	0·54 (0·40-0·73)
Fixed effects model for eGFR 60 to <90 (p<0·0001)							**0·56 (0·46-0·70)**
eGFR ≥90 mL/min per m²							
EMPA-REG OUTCOME	1043/1529	486/1529	NA	NA	NA	11·7	0·21 (0·09-0·53)
CANVAS Program	NA/2476	NA/2476	48	3·8	8·1	27·5	0·44 (0·25-0·78)
DECLARE-TIMI 58	4137/8162	4025/8162	120	2·5	4·9	60·8	0·50 (0·34-0·73)
Fixed effects model for eGFR ≥90 (p<0·0001)							**0·44 (0·32-0·59)**

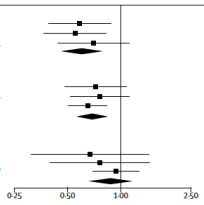


Zelniker TA. Lancet. Online Nov 10 2018

Hospitalización por falla cardíaca

B

	Patients: Treatment (n/N)	Patients: Placebo (n/N)	Events	Events per 1000 patient-years: Treatment	Events per 1000 patient-years: Placebo	Weight (%)	HR (95% CI)
eGFR <60 mL/min per m²							
EMPA-REG OUTCOME	1212/1819	607/1819	94	14·9	25·8	36·5	0·59 (0·39-0·88)
CANVAS Program	NA/2039	NA/2039	98	11·6	21·3	36·1	0·55 (0·37-0·83)
DECLARE-TIMI 58	606/1265	659/1265	77	12·3	19·3	27·4	0·70 (0·44-1·12)
Fixed effects model for eGFR <60 (p<0·0001)							**0·60 (0·47-0·77)**
eGFR 60 to <90 mL/min per m²							
EMPA-REG OUTCOME	2423/3661	1238/3661	100	8·4	11·7	21·3	0·72 (0·48-1·07)
CANVAS Program	NA/5625	NA/5625	108	4·6	6·1	23·4	0·76 (0·52-1·12)
DECLARE-TIMI 58	3838/7732	3894/7732	251	6·5	9·9	55·2	0·65 (0·51-0·84)
Fixed effects model for eGFR 60 to <90 (p<0·0001)							**0·69 (0·57-0·83)**
eGFR ≥90 mL/min per m²							
EMPA-REG OUTCOME	1050/1538	488/1538	27	5·4	7·9	11·3	0·67 (0·31-1·44)
CANVAS Program	NA/2476	NA/2476	37	3·7	5·1	15·7	0·76 (0·40-1·47)
DECLARE-TIMI 58	4137/8162	4025/8162	170	5·1	5·4	73·0	0·94 (0·69-1·26)
Fixed effects model for eGFR ≥90 (p=0·31)							**0·88 (0·68-1·13)**

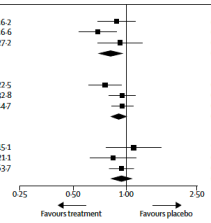


Zelniker TA. Lancet. Online Nov 10 2018

MACE

C

	Patients: Treatment (n/N)	Patients: Placebo (n/N)	Events	Events per 1000 patient-years: Treatment	Events per 1000 patient-years: Placebo	Weight (%)	HR (95% CI)
eGFR <60 mL/min per m²							
EMPA-REG OUTCOME	1212/1819	607/1819	275	52·7	60·5	36·2	0·88 (0·69-1·13)
CANVAS Program	NA/2039	NA/2039	261	36·3	49·5	36·6	0·69 (0·54-0·89)
DECLARE-TIMI 58	606/1265	659/1265	189	37·3	43·1	27·2	0·92 (0·69-1·23)
Fixed effects model for eGFR <60 (p=0·0077)							**0·82 (0·70-0·95)**
eGFR 60 to <90 mL/min per m²							
EMPA-REG OUTCOME	2423/3661	1238/3661	351	30·8	40·6	22·5	0·76 (0·61-0·94)
CANVAS Program	NA/5625	NA/5625	563	26·8	29·0	32·8	0·95 (0·80-1·13)
DECLARE-TIMI 58	3838/7732	3894/7732	757	24·5	25·8	44·7	0·95 (0·82-1·09)
Fixed effects model for eGFR 60 to <90 (p=0·0520)							**0·91 (0·82-1·00)**
eGFR ≥90 mL/min per m²							
EMPA-REG OUTCOME	1050/1538	488/1538	146	35·4	32·2	15·1	1·10 (0·77-1·57)
CANVAS Program	NA/2476	NA/2476	187	20·8	23·6	21·1	0·84 (0·62-1·13)
DECLARE-TIMI 58	4137/8162	4025/8162	613	18·8	19·7	63·7	0·94 (0·80-1·10)
Fixed effects model for eGFR ≥90 (p=0·35)							**0·94 (0·82-1·07)**



Zelniker TA. Lancet. Online Nov 10 2018

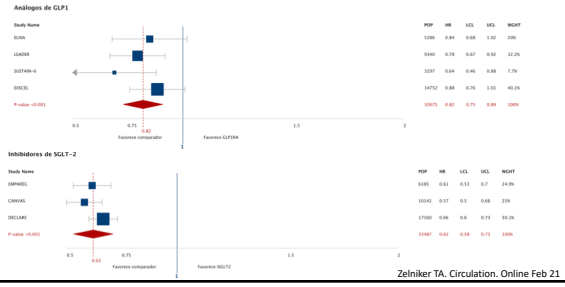
CV Death, MI, or Stroke by CV Disease History in SGLT2 Inhibitor and GLP-1 Receptor Agonist CVOTs

	Events/Patients	Hazard ratio (95% CI)
Patients with atherosclerotic CV disease (secondary prevention)		
GLP-1 receptor agonists	4365/35,823	0.87 (0.82–0.92)
SGLT2 inhibitors	2558/20,650	0.86 (0.80–0.93)
Overall (P = 0.002)		0.86 (0.80–0.93)
Patients with multiple risk factors (primary prevention)		
GLP-1 receptor agonists	506/7097	1.03 (0.87–1.23)
SGLT2 inhibitors	754/13,672	1.00 (0.87–1.16)
Overall (P = 0.81)		1.01 (0.87–1.19)

- To date, trials of antihyperglycemic agents for the treatment for T2DM have not shown a CV benefit in participants with CV risk factors (primary prevention)

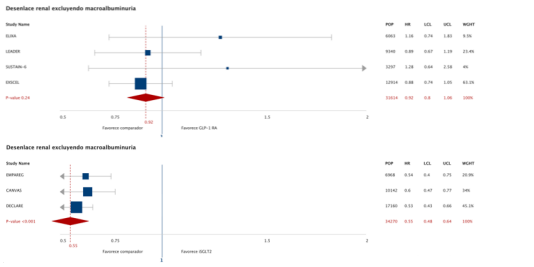
Zelniker TA, et al. *Lancet*. 2019; 393(10166):31-39.
Zelniker TA, et al. *Circulation*. 2019;139(17):2022–2031.

Desenlace renal compuesto incluyendo macroalbuminuria



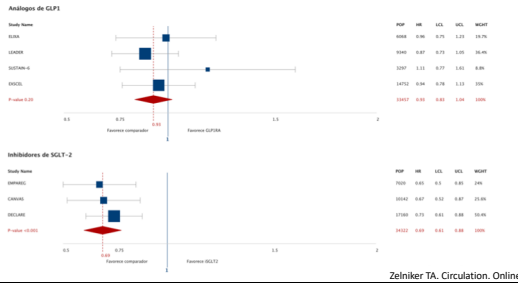
Zelniker TA. Circulation. Online Feb 21

Desenlace renal excluyendo macroalbuminuria

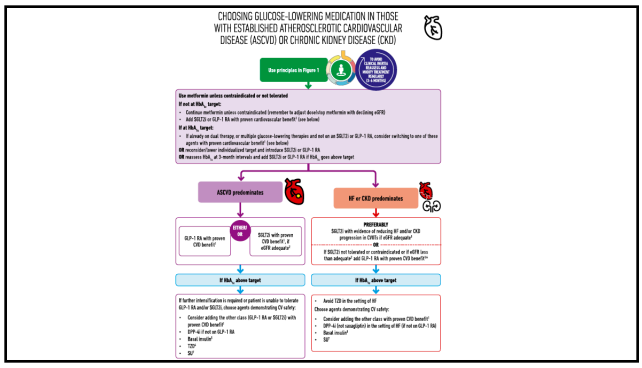


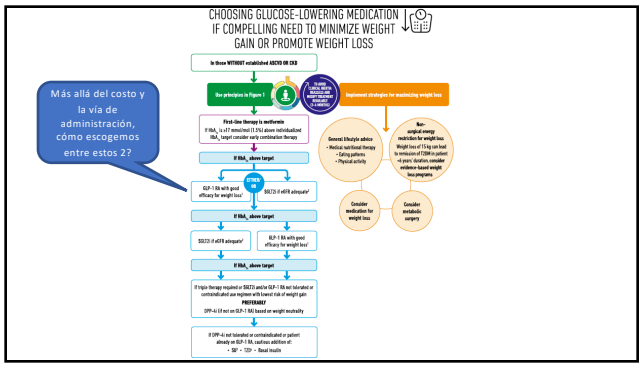
Zelniker TA. Circulation. Online Feb 21

Hospitalización por falla cardíaca



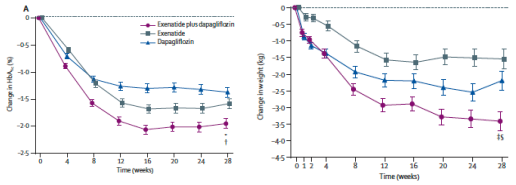
Zelniker TA. Circulation. Online Feb 21





Más allá del costo y la vía de administración, cómo escogemos entre estos 2?

DURATION-8: dapagliflozina vs exenatide semanal



Frias JP. Lancet Diab Endocrinol. 2016. Online Sep 16

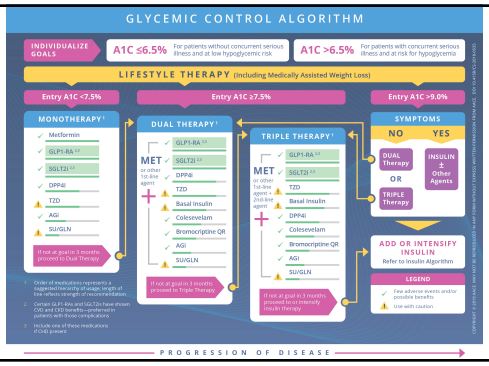
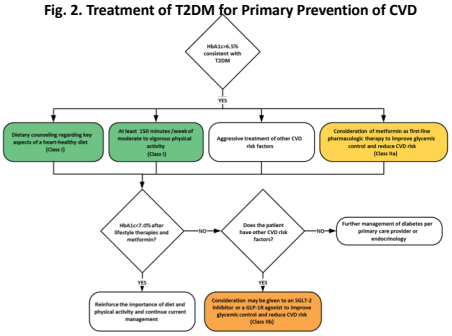


Fig. 2. Treatment of T2DM for Primary Prevention of CVD

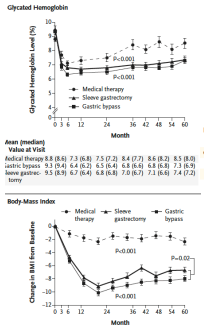


THE LANCET

"Sabatine and colleagues' meta-analysis...provides compelling evidence that SGLT2i should now be considered as first-line therapy after metformin in most people with type 2 diabetes..."

Reducción de mortalidad basado en estudios observacionales

Cirugía bariátrica

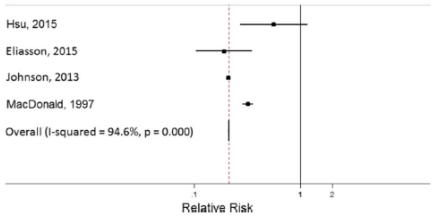


STAMPEDE

Event	Medical Therapy (N = 43)	Gastric Bypass (N = 50)	Sleeve Gastrectomy (N = 49)
	number of patients (percent)		
Cardiovascular			
Fatal myocardial infarction	1 (2)	0	0
Stroke	0	0	1 (2)

Schauer PR. N Engl J Med. 2017;376:641

Metanálisis: mortalidad en DM post cirugía bariátrica



Sheng S. Obes Surg.2017;27:2724

Vacunación influenza

Vacunación influenza estacional y mortalidad en DM

País	Diseño estudio	N	Tipo DM	Subgrupos	HR Mortalidad total (IC 95%)
Reino Unido	Cohorte retrospectivo	107598 años paciente	DM-2		0.50 (0.45-0.54)
Taiwan	Cohorte retrospectivo	5954 3071	DM-1 y DM-2	65-74 años >75 años	0.40 (0.34-0.47) 0.41 (0.34-0.50)
España	Cohorte retrospectivo	9916	DM-1 y DM-2		0.67 (0.47-0.96)
Israel	Cohorte retrospectivo	7929 8454	DM-1 y DM-2	Hombres Mujeres	0.35 (0.25-0.49) 0.32 (0.20-0.50)
Holanda	Caso-control	439 1314	>90% DM-2	18-64 años >65 años	0.76 (NS) 0.44 (0.20-0.96)

Dos Santos G. Hum Vacc Inmun. 2018;14:1853

Conclusiones

- la intervención multifactorial es fundamental para mejorar la sobrevida de los pacientes diabéticos
- Los iSGLT2 y aGLP-1 son los antidiabéticos que han mostrado reducción de mortalidad

Preguntas…

chenku2409@gmail.com

Puede descargar la presentación en:

www.EndoDrChen.com