PREVENZIONE DELL'IPOGLICEMIA

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Cos'è l'Ipoglicemia?

L'ipoglicemia è una delle più frequenti complicanze nel trattamento farmacologico del diabete

ed è un fattore fondamentale nella personalizzazione della terapia nell'anziano diabetico

La soglia di ipoglicemia è stata fissata ad un valore di glucosio ≤ 70 mg/dL (≤ 3,9 mmol/L)

Conseguenze dell'Ipoglicemia nell'Anziano - 1

- Ipoglicemia acuta
- Ipoglicemia notturna

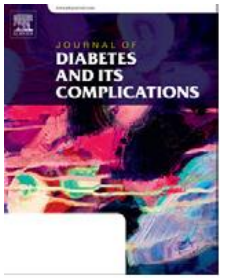
→ **Eventi cardiovascolari**

Allungamento del tratto QT (con aritmie ventricolari)
Ictus
Mortalità

→ Rischio di cadute
Rischio di fratture ossee
Riduzione del visus

- Ipoglicemia cronica/ricorrente → Demenza

Meta-analysis: Association between hypoglycaemia and serious adverse events in older patients



12 studi retrospettivi
1 studio prospettivo
4 studi post-hoc

> 60 anni

Nord America
Giappone
Taiwan
Europa

Eventi ipoglicemici

Mortalità

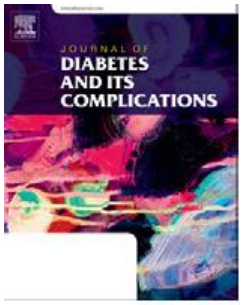
Fratture e cadute

Malattia vascolare

- *Macrovascolare*
- *Microvascolare*

Journal of Diabetes and Its Complications 30 (2016) 811–818

Meta-analysis: Association between hypoglycaemia and serious adverse events in older patients



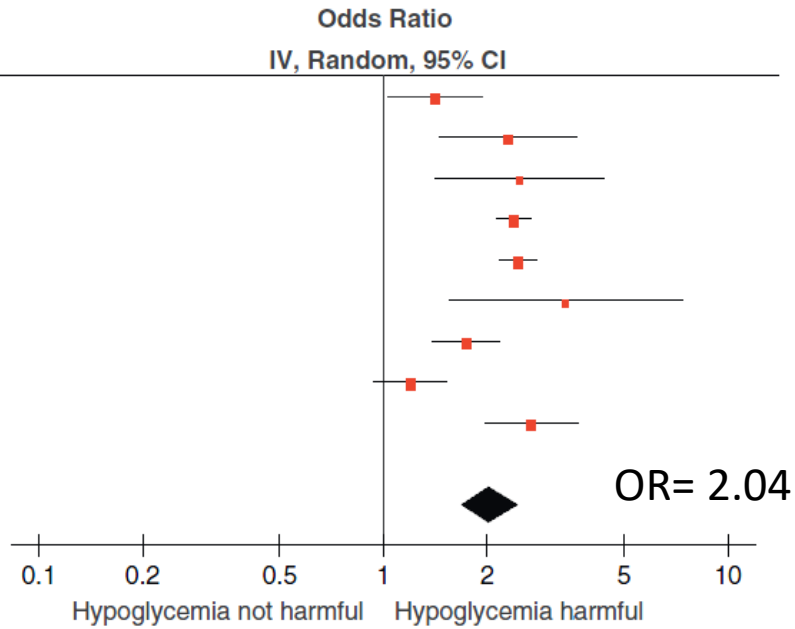
Journal of Diabetes and Its Complications 30 (2016) 811–818

Associazione tra ipoglicemia e mortalita'

Study or Subgroup	Weight	Odds Ratio IV, Random, 95% CI
Bonds Intensive 2010	11.4%	1.41 [1.03, 1.93]
Bonds Standard 2010	8.6%	2.30 [1.46, 3.62]
Hsu 2013	6.9%	2.48 [1.41, 4.36]
Khunti 2015	15.4%	2.39 [2.13, 2.68]
Majumdar 2013	15.3%	2.46 [2.17, 2.79]
McCoy 2012	4.5%	3.38 [1.55, 7.39]
Mellbin 2013	13.4%	1.74 [1.39, 2.18]
Zhao 2012	13.0%	1.20 [0.94, 1.53]
Zoungas 2010	11.5%	2.69 [1.97, 3.67]
Total (95% CI)	**100.0%**	**2.04 [1.68, 2.47]**

Heterogeneity: $Tau^2 = 0.06$; $Chi^2 = 43.44$, df = 8 ($P < 0.00001$); $I^2 = 82\%$

Test for overall effect: $Z = 7.19$ ($P < 0.00001$)



Meta-analysis: Association between hypoglycaemia and serious adverse events in older patients

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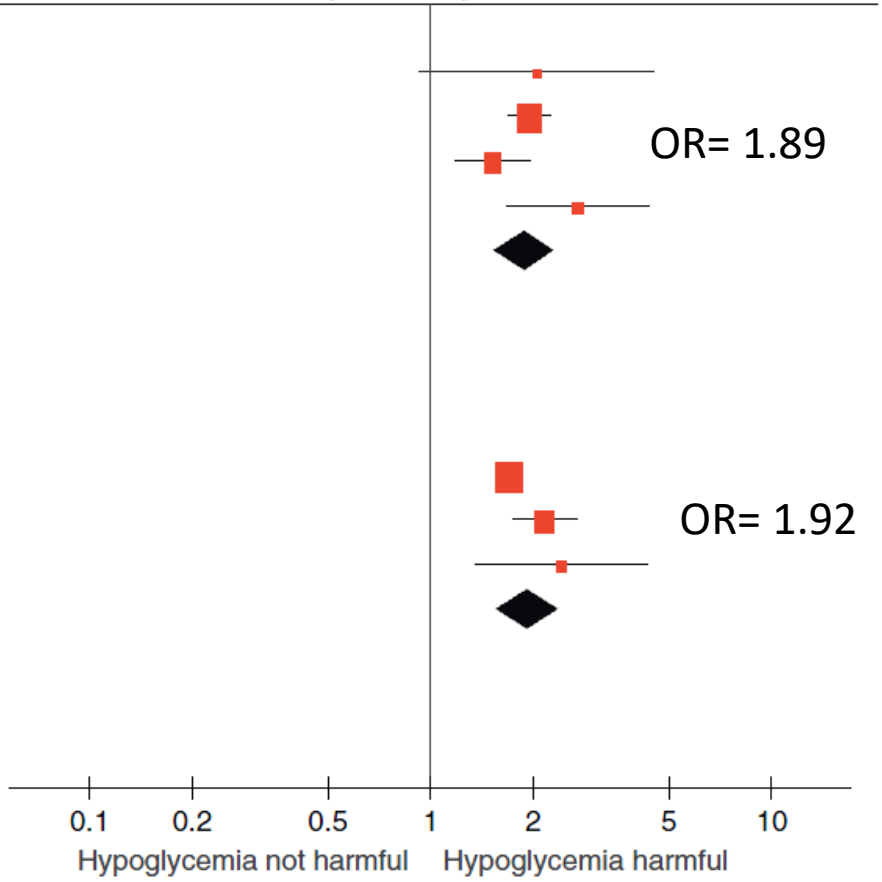
Associazione tra ipoglicemia, cadute e fratture

Study or Subgroup	Weight	Odds Ratio IV, Random, 95% CI
2.1.1 Falls		
Chiba 2015	6.0%	2.05 [0.93, 4.52]
Kacharoo 2015	48.4%	1.95 [1.70, 2.24]
Signorovitch 2013	31.6%	1.52 [1.18, 1.96]
Zhao 2015	14.0%	2.70 [1.67, 4.36]
Subtotal (95% CI)	100.0%	1.89 [1.54, 2.32]
Heterogeneity: $Tau^2 = 0.02$; $Chi^2 = 5.22$, df = 3 (P = 0.16); $I^2 = 43\%$		
Test for overall effect: Z = 6.15 (P < 0.00001)		
2.1.2 Fractures		
Johnston 2012	53.5%	1.70 [1.58, 1.83]
Kacharoo 2015	35.8%	2.16 [1.74, 2.68]
Rajpathak 2015	10.7%	2.42 [1.35, 4.34]
Subtotal (95% CI)	100.0%	1.92 [1.56, 2.38]
Heterogeneity: $Tau^2 = 0.02$; $Chi^2 = 5.43$, df = 2 (P = 0.07); $I^2 = 63\%$		
Test for overall effect: Z = 6.05 (P < 0.00001)		

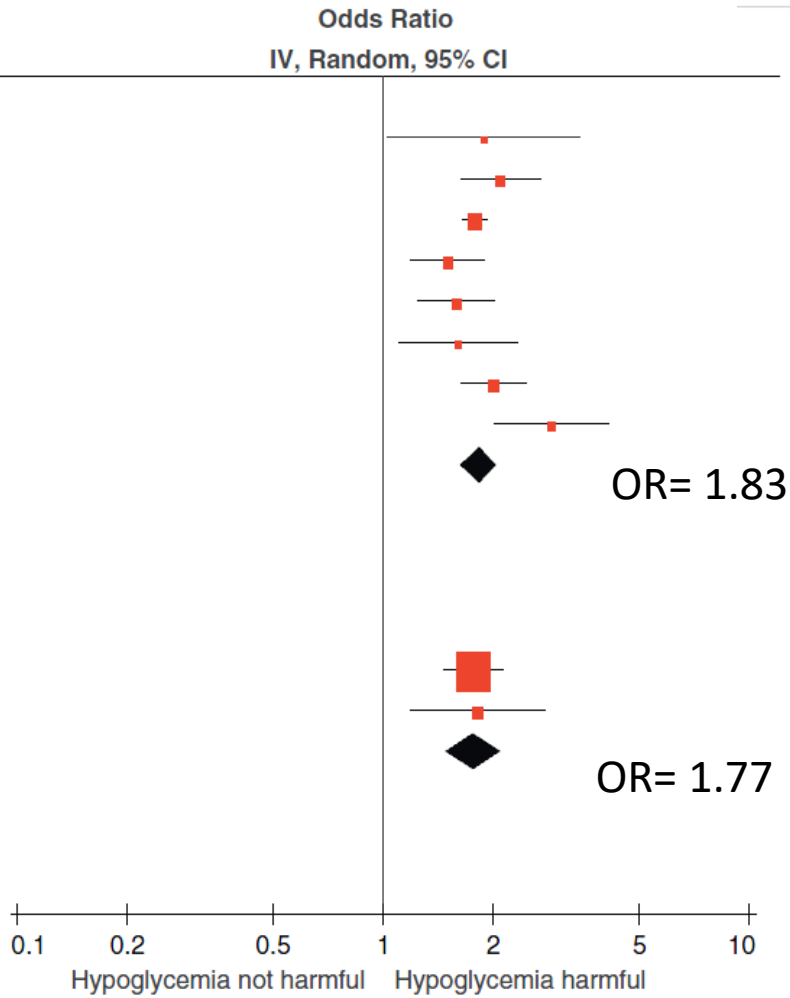


Meta-analysis: Association between hypoglycaemia and serious adverse events in older patients

Journal of Diabetes and Its Complications 30 (2016) 811–818

Associazione tra ipoglicemia ed eventi vascolari

Study or Subgroup	Weight	Odds Ratio IV, Random, 95% CI
1.1.1 Macrovascular		
Duckworth 2011	3.2%	1.88 [1.03, 3.43]
Hsu 2013	12.5%	2.09 [1.63, 2.68]
Johnston 2011	27.8%	1.78 [1.65, 1.92]
Khunti 2015	13.6%	1.50 [1.19, 1.89]
Mellbin 2013	12.9%	1.58 [1.24, 2.01]
Rathmann 2013	7.1%	1.60 [1.10, 2.33]
Zhao 2012	15.5%	2.00 [1.63, 2.45]
Zoungas 2010	7.5%	2.88 [2.01, 4.13]
Subtotal (95% CI)	**100.0%**	**1.83 [1.64, 2.05]**
Heterogeneity: $Tau^2 = 0.01$; $Chi^2 = 12.94$, df = 7 (P = 0.07); $I^2 = 46\%$		
Test for overall effect: Z = 10.53 (P < 0.00001)		
1.1.2 Microvascular		
Zhao 2012	83.5%	1.76 [1.46, 2.12]
Zoungas 2010	16.5%	1.81 [1.19, 2.75]
Subtotal (95% CI)	**100.0%**	**1.77 [1.49, 2.10]**
Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 0.01$, df = 1 (P = 0.90); $I^2 = 0\%$		
Test for overall effect: Z = 6.55 (P < 0.00001)		



L'ipoglicemia è una conseguenza della terapia farmacologica….

Quali sono le terapie associate agli eventi ipoglicemici?

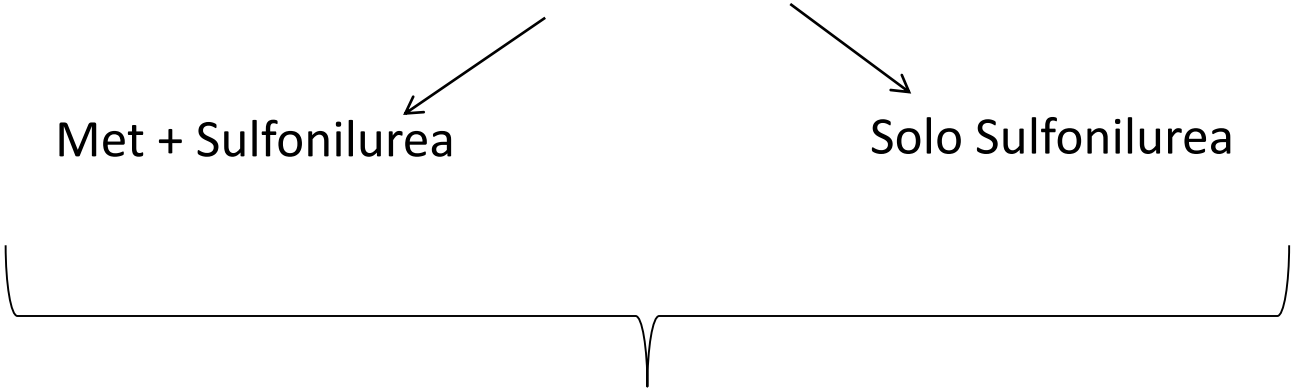
Sulfonylureas as second line drugs in type 2 diabetes and the risk of cardiovascular and hypoglycaemic events: population based cohort study

BMJ

2018

Studio di Coorte basato sulla popolazione
(> 23,000 pazienti)

Pazienti con DM2 (età media di 64 anni) in monoterapia
Metformina



Studiare il rischio di Infarto miocardio, Ictus, Mortalità, Ipoglicemia

Sulfonylureas as second line drugs in type 2 diabetes and the risk of cardiovascular and hypoglycaemic events: population based cohort study 2018

BMJ

Table 2 | Crude and adjusted hazard ratios for the association between the use of sulfonylureas as second line treatment and the risk of the study outcomes

Exposure	No of patients	No of events	Person years	Incidence rate (95% CI) per 1000 person years	Crude hazard ratio (95% CI)	Adjusted hazard ratio (95% CI)*
Myocardial infarction						
Metformin	23 551	152	24 673	6.2 (5.3 to 7.2)	Reference	Reference
Sulfonylureas	23 551	185	23 858	7.8 (6.7 to 9.0)	1.25 (1.01 to 1.55)	1.26 (1.01 to 1.56)
Ischaemic stroke						
Metformin	23 636	137	24 791	5.5 (4.7 to 6.5)	Reference	Reference
Sulfonylureas	23 636	162	24 015	6.7 (5.8 to 7.9)	1.22 (0.97 to 1.53)	1.24 (0.99 to 1.56)
Cardiovascular death						
Metformin	23 548	203	25 176	8.1 (7.0 to 9.3)	Reference	Reference
Sulfonylureas	23 548	226	24 011	9.4 (8.3 to 10.7)	1.17 (0.97 to 1.41)	1.18 (0.98 to 1.43)
All cause mortality						
Metformin	23 592	533	24 742	21.5 (19.8 to 23.5)	Reference	Reference
Sulfonylureas	23 592	657	24 060	27.3 (25.3 to 29.5)	1.27 (1.13 to 1.42)	1.28 (1.15 to 1.44)
Severe hypoglycaemia						
Metformin	23 555	18	24 905	0.7 (0.5 to 1.1)	Reference	Reference
Sulfonylureas	23 555	132	23 919	5.5 (4.7 to 6.5)	7.59 (4.64 to 12.43)	7.60 (4.64 to 12.44)

*The models for myocardial infarction, ischaemic stroke, cardiovascular death, and severe hypoglycaemia were adjusted for age, sex, deciles of high-dimensional propensity score, and history of the respective outcome in the year before cohort entry (or, for the case of cardiovascular death, history of myocardial infarction or ischaemic stroke). The model for all cause mortality was adjusted for age, sex, and deciles of high-dimensional propensity score.

Sulfonylureas as second line drugs in type 2 diabetes and the risk of cardiovascular and hypoglycaemic events: population based cohort study 2018

BMJ

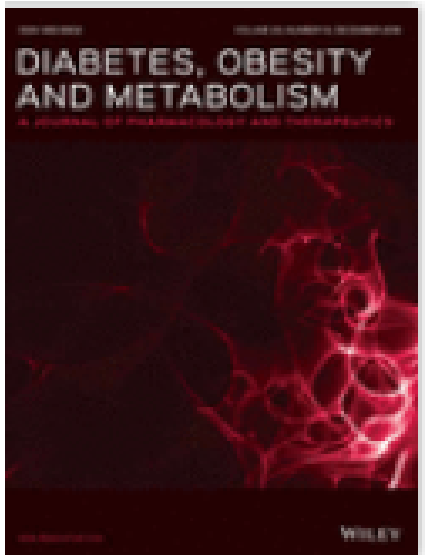
Table 3 | Crude and adjusted hazard ratios for the association between switching versus adding sulfonylureas and the risk of the study outcomes

Exposure	No of patients	No of events	Person years	Incidence rate (95% CI) per 1000 person years	Crude hazard ratio (95% CI)	Adjusted hazard ratio (95% CI)*
Myocardial infarction						
Adding sulfonylureas	13 203	57	11 442	5.0 (3.8 to 6.5)	Reference	Reference
Switching to sulfonylureas	9759	68	5138	13.2 (10.4 to 16.8)	2.65 (1.86 to 3.78)	1.51 (1.03 to 2.24)
Ischaemic stroke						
Adding sulfonylureas	13 300	63	11 542	5.5 (4.3 to 7.0)	Reference	Reference
Switching to sulfonylureas	9771	46	5185	8.9 (6.6 to 11.8)	1.60 (1.09 to 2.34)	0.88 (0.58 to 1.33)
Cardiovascular death						
Adding sulfonylureas	13 217	75	11 464	6.5 (5.2 to 8.2)	Reference	Reference
Switching to sulfonylureas	9779	93	5204	17.9 (14.6 to 21.9)	2.70 (1.99 to 3.66)	1.22 (0.87 to 1.71)
All cause mortality						
Adding sulfonylureas	13 242	217	11 504	18.9 (16.5 to 21.5)	Reference	Reference
Switching to sulfonylureas	9800	256	5216	49.1 (43.4 to 55.5)	2.57 (2.14 to 3.08)	1.23 (1.00 to 1.50)
Severe hypoglycaemia						
Adding sulfonylureas	13 215	39	11 440	3.4 (2.5 to 4.7)	Reference	Reference
Switching to sulfonylureas	9770	45	5177	8.7 (6.5 to 11.6)	2.61 (1.70 to 4.01)	1.06 (0.65 to 1.71)

*The models for myocardial infarction, ischaemic stroke, cardiovascular death, and severe hypoglycaemia were adjusted for age, sex, deciles of propensity score, history of the respective outcome in the year before cohort entry (or, for the case of cardiovascular death, history of myocardial infarction or ischaemic stroke), body mass index category, diuretics, statins, paracetamol, opioids, and nephropathy. The model for all cause mortality was adjusted for age, sex, deciles propensity score, body mass index category, diuretics, statins, paracetamol, opioids, and nephropathy.

2017

I nuovi Anti-Diabetici Orali (ADO)



2018

hanno un basso rischio/profilo per l'ipoglicemia?

JGIM
Journal of General Internal Medicine

2017

Agent	MACE*	CVD mortality	All-cause mortality	HF admissions†	Hypoglycemia risk‡	Weight change	Cost
Pioglitazone	↓	↔	↔	↑ §	Low	↑	Low
Empagliflozin	↓	↓	↓	↓	Low	↓	High
Liraglutide	↓	↓	↓	↔	Low	↓	High
Semaglutide	↓	↔	↔	↔	Low	↓	High[a]

2017

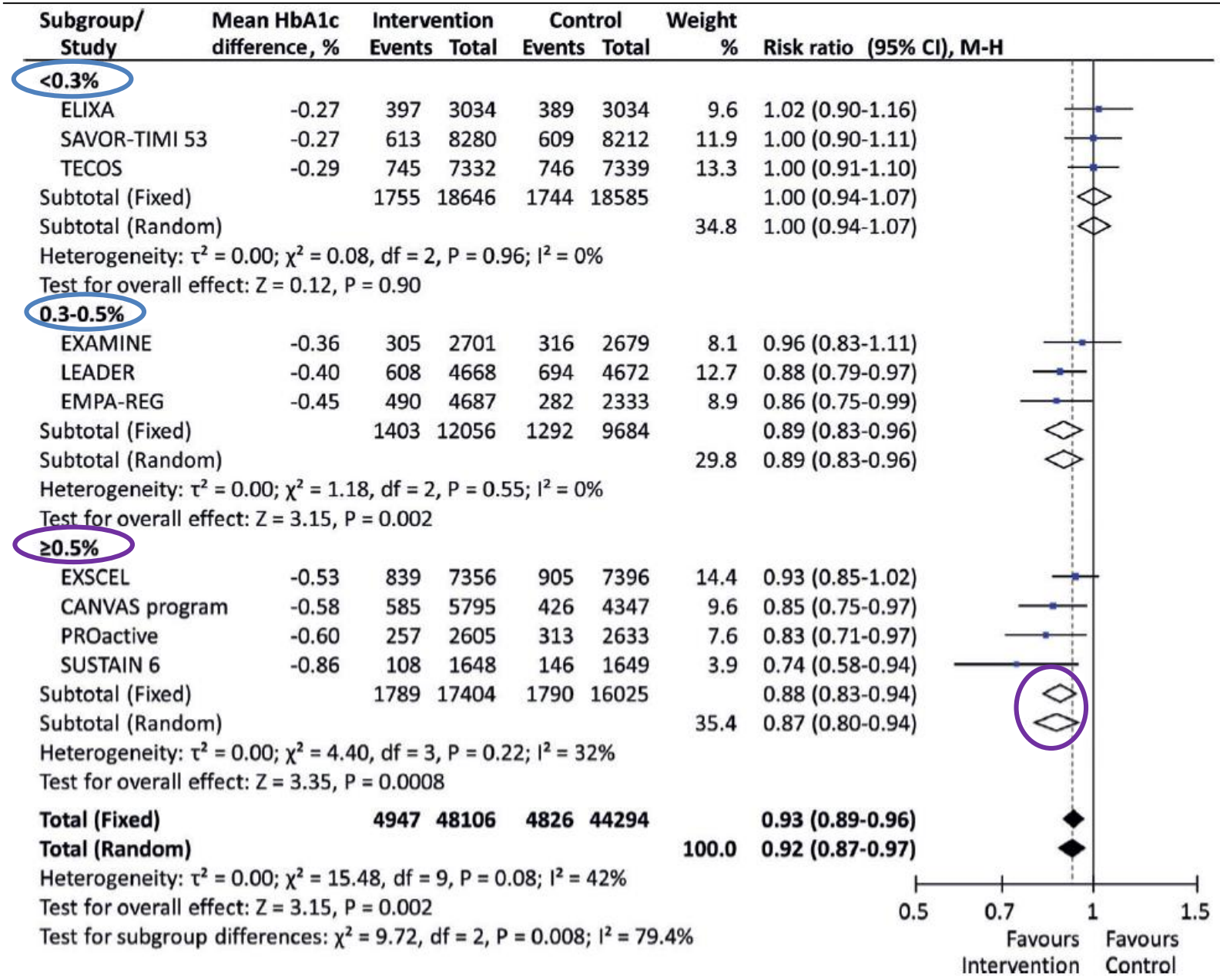
JGIM
Journal of General Internal Medicine

Inibitori del SGLT-2 | **TZD** | **Agonisti del GLP-1** | **Agonisti del GLP-1**

	EMPA-REG OUTCOME *N* = 7020		IRIS *N* = 3876		LEADER *N* = 9340		SUSTAIN-6 *N* = 3297	
	Empagliflozin *N* = 4687	Placebo *N* = 2333	Pioglitazone *N* = 1939	Placebo *N* = 1937	Liraglutide *N* = 4668	Placebo *N* = 4672	Semaglutide *N* = 1648	Placebo *N* = 1649
Baseline features								
Age (years)	63.1 ± 8.6	63.2 ± 8.8	63.5 ± 10.6	63.5 ± 10.7	64.2 ± 7.2	64.4 ± 7.2	64.7 ± 7.2**	64.6 ± 7.6**
Male sex (%)	71.2	72.0	66.7	64.3	64.5	64.0	61.5	60.0
White race (%)	72.6	71.9	83.9*	85.0*	77.5‡	77.5‡	84.0	82.0
BMI (kg/m^2)	30.6 ± 5.3	30.7 ± 5.2	29.9 ± 5.6	30.0 ± 5.3	32.5 ± 6.3	32.5 ± 6.3	32.8 ± 6.2**	32.8 ± 6.2**
HbA1c (%)	8.1 ± 0.9	8.1 ± 0.8	5.8 ± 0.4	5.8 ± 0.4	8.7 ± 1.6	8.2 ± 1.5	8.1 ± 1.5**	8.7 ± 1.5**
Main trial outcomes								
Primary outcome	3-Point MACE HR = 0.86 (0.74–0.99)		Fatal/non-fatal MI or stroke HR = 0.76 (0.62–0.93)		3-Point MACE HR = 0.87 (95% CI, 0.78–0.97)		3-Point MACE HR = 0.74 (95% CI, 0.58–0.95)	
Secondary outcomes								
CV mortality	0.62 (0.49–0.77)		0.79 (0.48, 1.31)†		0.78 (0.66–0.93)		0.98 (0.65–1.48)	
All-cause mortality	0.68 (0.57–0.82)		0.93 (0.73–1.17)		0.85 (0.74–0.97)		1.05 (0.74–1.50)	
MI	0.87 (0.70–1.09)		0.87 (0.70–1.09)†		0.88 (0.75–1.03)		0.74 (0.51–1.08)¶	
Stroke	1.18 (0.89–1.56)		0.82 (0.61–1.10)		0.89 (0.72–1.11)		0.61 (0.38–0.99)¶	
HF hospitalization	0.65 (0.50–0.85)		1.22 (0.81–1.84)†		0.87 (0.73–1.05)		1.11 (0.77–1.61)	

Stratificazione secondo il miglioramento dell'HbA1c

Diabetes Obes Metab 2018



Subgroup / Study	Mean HbA1c difference, %	Intervention Events	Intervention Total	Control Events	Control Total	Weight %	Risk ratio (95% CI), M-H
<0.3%							
ELIXA	-0.27	397	3034	389	3034	9.6	1.02 (0.90-1.16)
SAVOR-TIMI 53	-0.27	613	8280	609	8212	11.9	1.00 (0.90-1.11)
TECOS	-0.29	745	7332	746	7339	13.3	1.00 (0.91-1.10)
Subtotal (Fixed)		1755	18646	1744	18585		1.00 (0.94-1.07)
Subtotal (Random)						34.8	1.00 (0.94-1.07)
Heterogeneity: $\tau^2 = 0.00$; $\chi^2 = 0.08$, df = 2, P = 0.96; $I^2 = 0\%$							
Test for overall effect: Z = 0.12, P = 0.90							
0.3-0.5%							
EXAMINE	-0.36	305	2701	316	2679	8.1	0.96 (0.83-1.11)
LEADER	-0.40	608	4668	694	4672	12.7	0.88 (0.79-0.97)
EMPA-REG	-0.45	490	4687	282	2333	8.9	0.86 (0.75-0.99)
Subtotal (Fixed)		1403	12056	1292	9684		0.89 (0.83-0.96)
Subtotal (Random)						29.8	0.89 (0.83-0.96)
Heterogeneity: $\tau^2 = 0.00$; $\chi^2 = 1.18$, df = 2, P = 0.55; $I^2 = 0\%$							
Test for overall effect: Z = 3.15, P = 0.002							
≥0.5%							
EXSCEL	-0.53	839	7356	905	7396	14.4	0.93 (0.85-1.02)
CANVAS program	-0.58	585	5795	426	4347	9.6	0.85 (0.75-0.97)
PROactive	-0.60	257	2605	313	2633	7.6	0.83 (0.71-0.97)
SUSTAIN 6	-0.86	108	1648	146	1649	3.9	0.74 (0.58-0.94)
Subtotal (Fixed)		1789	17404	1790	16025		0.88 (0.83-0.94)
Subtotal (Random)						35.4	0.87 (0.80-0.94)
Heterogeneity: $\tau^2 = 0.00$; $\chi^2 = 4.40$, df = 3, P = 0.22; $I^2 = 32\%$							
Test for overall effect: Z = 3.35, P = 0.0008							
Total (Fixed)		**4947**	**48106**	**4826**	**44294**		**0.93 (0.89-0.96)**
Total (Random)						**100.0**	**0.92 (0.87-0.97)**
Heterogeneity: $\tau^2 = 0.00$; $\chi^2 = 15.48$, df = 9, P = 0.08; $I^2 = 42\%$							
Test for overall effect: Z = 3.15, P = 0.002							
Test for subgroup differences: $\chi^2 = 9.72$, df = 2, P = 0.008; $I^2 = 79.4\%$							

Effects of antihyperglycaemic treatment on MACE in patients with type 2 diabetes, stratified by achieved HbA1c

Conclusioni -1

Ipoglicemia è un fattore di rischio per cadute, fratture, eventi cardiovascolari, ictus e mortalità

Le sulfoniluree sono associate all'ipoglicemia, eventi cardiovascolari e mortalità

Nuovi ADO sembrano avere un ruolo non solo nel migliorare il controllo glicemico ma anche nel ridurre gli eventi CVD

Studi nei pazienti anziani con i nuovi ADO sono necessari

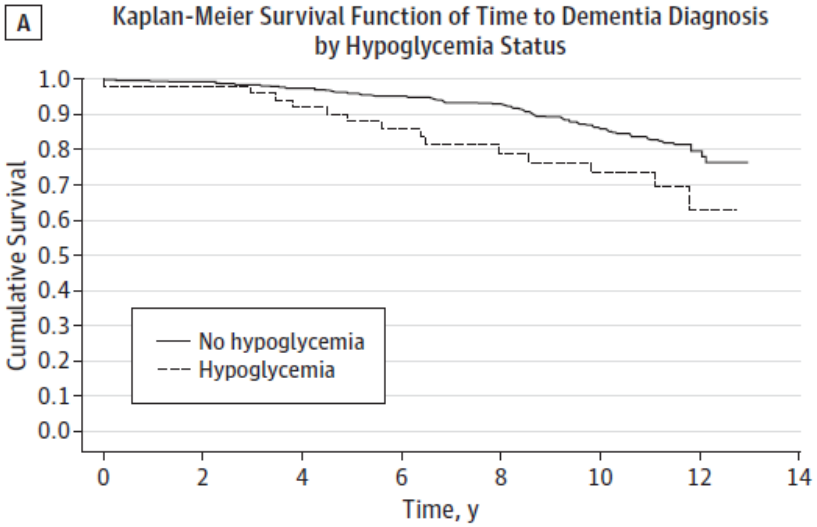
Conseguenze dell'Ipoglicemia nell'Anziano - 2

Ipoglicemia cronica/ricorrente

Demenza

Association Between Hypoglycemia and Dementia in a Biracial Cohort of Older Adults With Diabetes Mellitus

Kristine Yaffe, MD; Cherie M. Falvey, MPH; Nathan Hamilton, MA; Tamara B. Harris, MD; Eleanor M. Simonsick, PhD; Elsa S. Strotmeyer, PhD, MPH; Ronald I. Shorr, MD, MS; Andrea Metti, MPH; Ann V. Schwartz, PhD, MPH; for the Health ABC Study



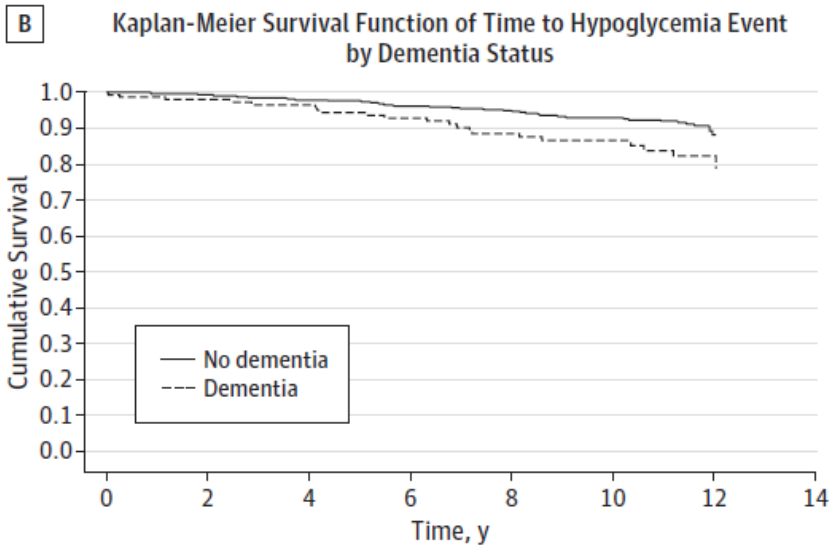
Health ABC
783 anziani con DM2 (età media: 74 anni)

Table 2. Multivariate-Adjusted Cox Proportional Hazards Regression Estimates for Time to Dementia Associated With a Hypoglycemic Event

Variable	Hazard Ratio (95% CI)
Hypoglycemic event	2.09 (1.00-4.35)
Age	1.15 (1.08-1.22)
Black race/ethnicity	0.77 (0.51-1.16)
Female sex	0.78 (0.54-1.12)
Education	1.30 (0.85-1.96)
APOE ε4 status	2.17 (1.53-3.08)
Prevalent diabetes mellitus	1.70 (1.12-2.58)
Insulin use	1.04 (0.64-1.67)
Glycated hemoglobin level	1.00 (0.85-1.17)
Baseline Mini-Mental State Examination score	0.96 (0.93-0.99)

Association Between Hypoglycemia and Dementia in a Biracial Cohort of Older Adults With Diabetes Mellitus

Kristine Yaffe, MD; Cherie M. Falvey, MPH; Nathan Hamilton, MA; Tamara B. Harris, MD; Eleanor M. Simonsick, PhD; Elsa S. Strotmeyer, PhD, MPH; Ronald I. Shorr, MD, MS; Andrea Metti, MPH;



Health ABC
148 persone con DM2 che hanno sviluppato demenza

Table 3. Multivariate-Adjusted Cox Proportional Hazards Regression Estimates for Time to a Hypoglycemic Event Associated With Dementia

Variable	Hazard Ratio (95% CI)
Dementia	3.10 (1.46-6.58)
Age	1.11 (1.02-1.22)
Black race/ethnicity	2.47 (1.32-4.62)
Female sex	0.95 (0.56-1.61)
Education	0.96 (0.54-1.72)
Prevalent diabetes mellitus	3.21 (1.48-6.97)
Insulin use	4.71 (1.33-16.69)
Baseline Mini-Mental State Examination score	0.97 (0.92-1.02)

Terapia anti-diabetica

Ipoglicemia

Demenza

In pazienti anziani fragili con DM2

Obiettivi

- ***Studiare l'associazione tra l'ipoglicemia severa ed il trattamento anti-diabetico in pazienti anziani con DM2 in RSA***
- ***Confrontare le differenze di tali associazioni secondo la presenza di demenza***

SOCIETÀ ITALIANA
DI GERONTOLOGIA E GERIATRIA

ELSEVIER

JAMDA

journal homepage: www.jamda.com

Original Study

2015

Severe Hypoglycemia Is Associated With Antidiabetic Oral Treatment Compared With Insulin Analogs in Nursing Home Patients With Type 2 Diabetes and Dementia: Results From the DIMORA Study

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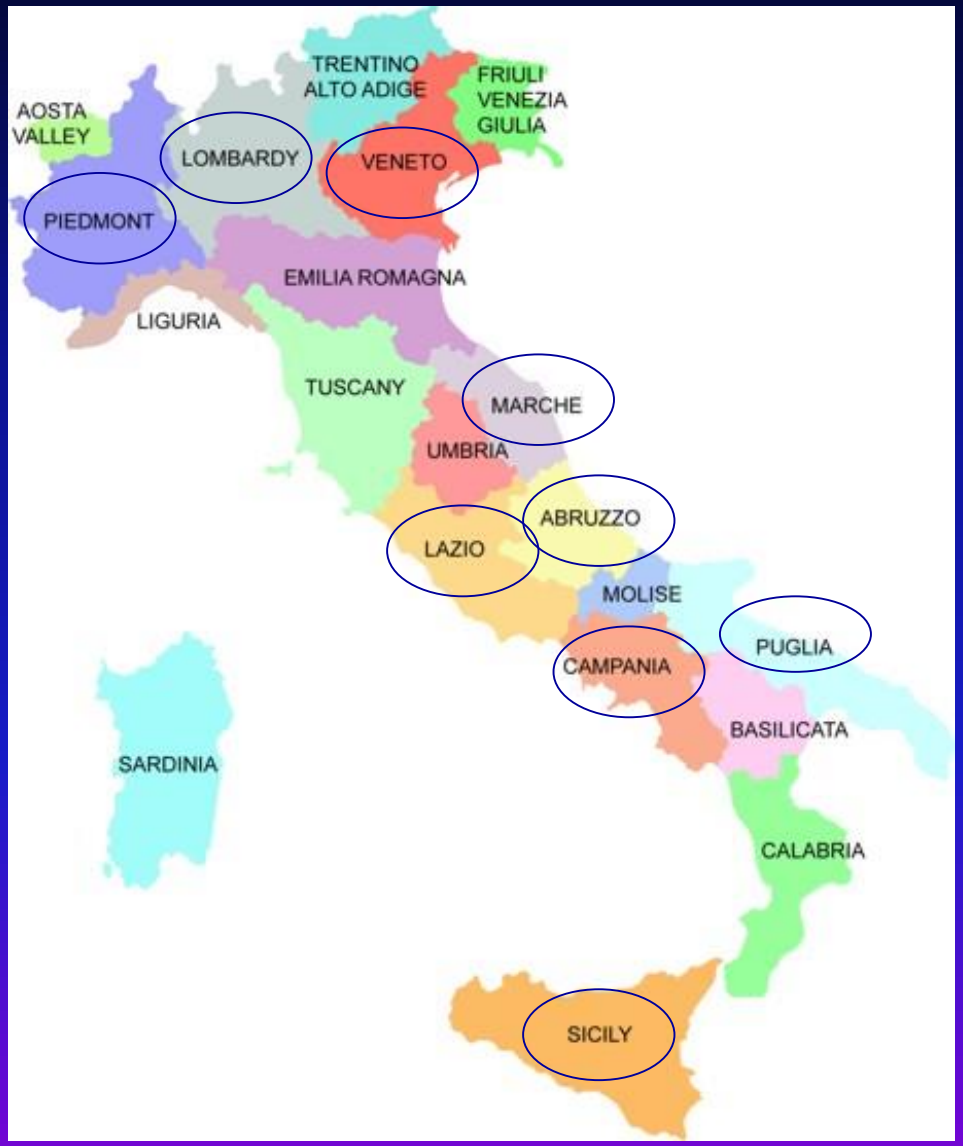
DIabete MellitO in Residenza sanitaria Assistenziale "DIMORA"



- 9 regioni
- 150 siti
- Raccolta dati dal 2011-2013
- 2258 pazienti ricoverati > 65 anni con diabete mellito di tipo 2

DIMORA

- *Studio osservazionale nel periodo 2011-2013*
- *Raccolta dati:*

  Demografici, antropometrici, stato funzionale, controllo glicemico, comorbidità, parametri biochimici e clinici, eventi ipoglicemici, trattamento anti-diabetico

  - *Trattamento anti-diabetico specifico: dieta, anti-diabetici orali (Sulfoniluree, Biguanidi, Glinidi, Glitazoni, Inibitori dell'alfa-glucosidasi, Incretine), Analoghi dell'insulina (pronta, miscelate, lenta)*

Caratteristiche Cliniche dei pazienti con DM2 in RSA

	Tutti (n=2258)	Demenza (n=1138)	No demenza (n=1113)	*p*
Eta', anni	82 (8)	83 (8)	81 (8)	<0.001
Sesso (m/f)	694/1564	305/833	389/724	0.078
IMC, kg/m^2	25.4 (4.8)	24.4 (4.7)	26.3 (4.7)	<0.001
HbA1c,%	7.1 (1.3)	7.0 (1.2)	7.1 (1.4)	0.468
Perdita di ADL	3.7 (1.8)	4.4 (1.2)	2.9 (1.9)	<0.001
Durata diabete, anni	12.6 (8.1)	13.3 (8.2)	11.9 (8.0)	0.005
Durata del ricovero, anni	3.1 (6.0)	3.3 (7.3)	2.9 (1.9)	<0.001

La prevalenza del trattamento anti-diabetico nei gruppi

	Tutti (n=2258)	Demenza (n=1138)	No demenza (n=1113)	*p*
Dieta n, (%)	270 (12%)	150 (13%)	120 (10%)	0.084
Anti-diabetici orali n, (%)	1078 (48%)	534 (47%)	544 (49%)	0.325
Insulina n, (%)	760 (34%)	393 (35%)	367 (33%)	0.461
Anti-diabetici orali + insulina n, (%)	150 (6%)	66 (5%)	84 (8%)	0.093

Characteristics of Patients With Dementia With and Without Hypoglycemia (n = 1138)

Characteristic	Hypoglycemia, n = 202	No Hypoglycemia, n = 981	*P*
Age, y	85 (7)	82 (8)	.007
Sex (men/women)	(65/137)	(261/720)	.757
BMI	24.8 (3.4)	24.3 (4.8)	.211
HbA1c, %	7.3 (1.0)	7.0 (1.2)	.008
ADL impairments	4.8 (0.7)	4.4 (1.3)	<.001
Length of stay, y	1.7 (3.0)	3.5 (7.7)	.006
Comorbidities	2.2 (1.1)	1.9 (1.2)	.002
AOD, n (%)	138 (70)	402 (43)	<.001
Insulin use, n (%)	54 (24)	336 (36)	.001
Insulin + AOD, n (%)	10 (6)	56 (6)	.995

Values are expressed as means (SD) unless otherwise indicated.

Characteristics of Patients Without Dementia With and Without Hypoglycemia (n = 1113)

Characteristic	Hypoglycemia, n = 87	No Hypoglycemia, n = 1026	*P*
Age, y	82 (9)	81 (8)	.147
Sex (men/women)	(32/55)	(355/671)	.124
BMI	23.9 (4.7)	26.5 (4.7)	.001
HbA1c, %	7.3 (1.4)	7.0 (1.4)	.187
ADL impairments	3.1 (1.8)	2.8 (1.9)	.383
Length of stay, y	2.2 (3.2)	2.9 (4.9)	.239
Comorbidities	1.5 (1.3)	1.4 (1.1)	.690
AOD, n (%)	30 (35)	554 (54)	.020
Insulin use, n (%)	48 (55)	380 (37)	.001
Insulin + AOD, n (%)	9 (10)	92 (9)	.627

Values are expressed as means (SD) unless otherwise indicated.

Maggiore utilizzo di ADO e Meno utilizzo di insulina

Minore utilizzo di ADO e Maggiore utilizzo di insulina

Demenza

Eventi Ipoglicemici

- ↑ Età
- ↑ HbA1c
- ↑ Perdite ADL
- ↓ Durata del ricovero

- ↑ Uso di ADO
- ↓ Uso di insulina

No Demenza

Eventi Ipoglicemici

- = Età
- = HbA1c
- = Perdite ADL
- = Durata del ricovero

- ↓ Uso di ADO
- ↑ Uso di insulina

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Modelli logistici con Ipoglicemia come variabile dipendente in pazienti con Demenza

	Unadjusted OR (95%CI)	p
Metformina	0.859 (0.565-1.306)	0.480
Sulfoniluree	4.931 (3.186-7.630)	<0.001
Met + Sulfoniluree	2.931 (1.796-4.782)	<0.001
Glinidi	0.458 (0.164-1.281)	0.137
Insulina rapida	0.548 (0.355-0.848)	0.007
Insulina miscelata	1.306 (0.537-3.175)	0.556
Insulina lenta	0.414 (0.148-1.154)	0.092

Modelli logistici aggiustati con Ipoglicemia come variabile dipendente in pazienti con Demenza

	Model AOD OR (95% CI)	*p*	Model Insulina OR (95% CI)	*p*
Metformina	0.678 (0.380-1.210)	0.189		
Sulfoniluree	8.805 (4.260-18.201)	<0.001		
Met+Sulfoniluree	6.639 (3.273-14.710)	0.001		
Glinidi	1.486 (0.401-5.508)	0.554		
Insulina rapida			0.333 (0.184-0.602)	< 0.001
Insulina miscelata			0.812 (0.211 -3.123)	0.762
Insulina lenta			0.248 (0.070 - 0.882)	0.031

Aggiustati per sito, sesso, BMI, HbA1c, ADL, durata del ricovero, comorbidità

Conclusioni -2

- La demenza può provocare l'ipoglicemia, così come l'ipoglicemia può avere un ruolo sull'insorgenza della demenza.

<u>Nei pazienti dementi in RSA:</u>

Sembra opportuno l'utilizzo dei nuovi farmaci orali a basso rischio ipoglicemico ma servono i trial clinici

Le insuline, a rapida o a lenta azione, sono associate ad un minore probabilità di un evento ipoglicemico

NON TUTTI GLI ANZIANI >80 ANNI PRESENTANO SIMILI CARATTTERISTICHE CLINICHE.

OGNI PAZIENTE NECESSITA UN TRATTAMENTO ANTI-DIABETICO PERSONALIZZATO.

Treating Diabetes Mellitus in Older and Oldest Old Patients

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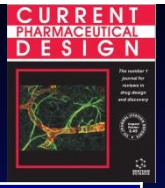

Sulfoniluree	Glinidi	Biguandi	Glitazonici	Inibitori α-glucosidasi	Inibitori DPP-IV	Inibitori SGLT-2*
Rischio di Ipoglicemia nei > 80 enni						
⇑⇑	⇓⇑	⇓	⇓	⇓	⇓⇓	⇓⇓

Agonisti GLP-1*	Insulina rapida**	Insulina lenta**	Insulina pre-miscelata
Rischio di Ipoglicemia nei > 80 enni			
⇓⇓	⇓	⇓	??

*Dati estrapolati

** Dati in relazione della corretta assunzione calorica

Conclusioni -3

La prevenzione assoluta dell'ipoglicemia è fondamentale nell'anziano per la prevenzione delle malattie cardiovascolari, della demenza ed in fine per la qualità della vita

Grazie per l'attenzione