Prevalencia e incidencia de Diabetes Mellitus en el anciano

Dr. Juan Miguel A. García Lara
ALMA 2012
Salamanca, España

Antecedentes: dos escenarios

Adulto con DM



Anciano con DM

PREVALENCIA

Selvin E, et al. Diabetes Care 2006. 29(11):2415-2419

Antecedentes: dos escenarios

Anciano

→ Desarrolla DM

→ Muerte

INCIDENCIA

Selvin E, et al. Diabetes Care 2006. 29(11):2415-2419

Epidemiología de la diabetes en el anciano

Roopa Mehta,* María Eugenia del-Moral,* Carlos Alberto Aguilar-Salinas*

* Departamento de Endocrinología y Metabolismo.
Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán.

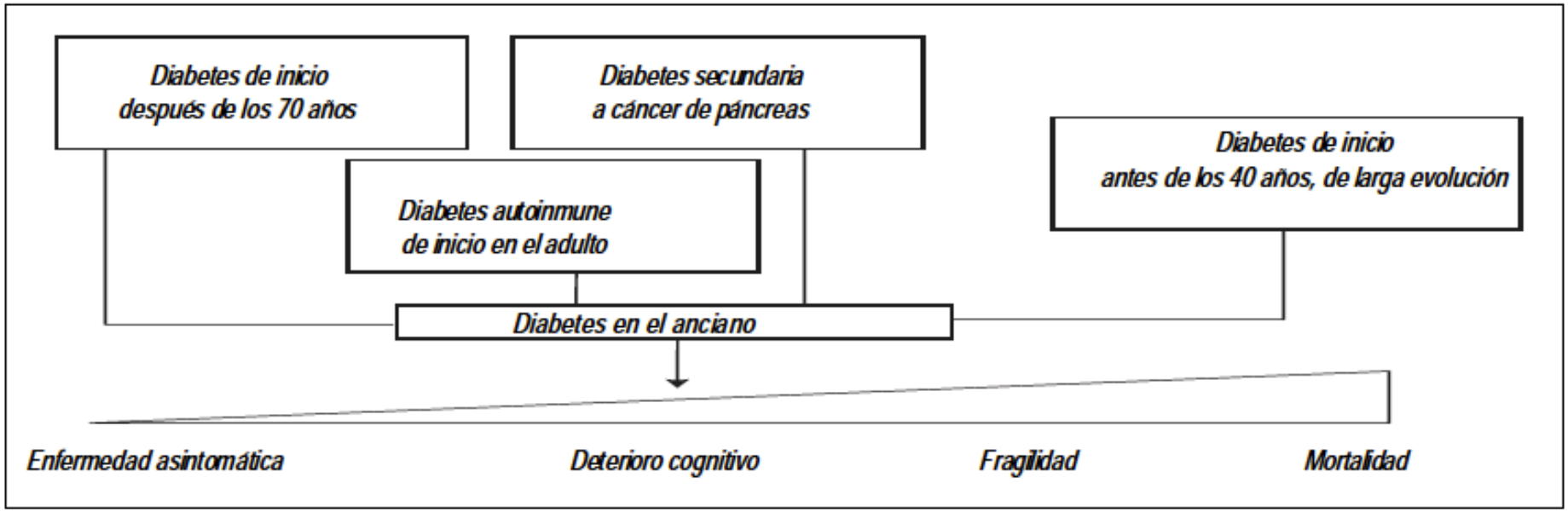


Figura 1. Diabetes en el anciano. Perfil clínico heterogéneo.

Revista de Investigación Clínica 2010. 62(4): 305-311

Antecedentes: ¿qué criterios diagnósticos se usaron?

Table 1 Criteria used for glucometabolic classification according to the WHO (1999) and ADA (1997 and 2003) (values are expressed as venous plasma glucose)

Glucometabolic category	Source	Classification criteria [mmol/L (mg/dL)]
Normal glucose regulation (NGR)	WHO	FPG < 6.1 (110) + 2 h PG < 7.8 (140)
	ADA (1997)	FPG < 6.1 (110)
	ADA (2003)	FPG < 5.6 (100)
Impaired fasting glucose (IFG)	WHO	FPG ≥ 6.1 (110) and < 7.0 (126) + 2 h PG < 7.8 (140)
	ADA (1997)	FPG ≥ 6.1 (110) and < 7.0 (126)
	ADA (2003)	FPG ≥ 5.6 (100) and < 7.0 (126)
Impaired glucose tolerance (IGT)	WHO	FPG < 7.0 (126) + 2 h PG ≥ 7.8 and < 11.1 (200)
Impaired glucose homeostasis (IGH)	WHO	IFG or IGT
Diabetes mellitus (DM)	WHO	FPG ≥ 7.0 (126) or 2 h PG ≥ 11.1 (200)
	ADA (1997)	FPG ≥ 7.0 (126)
	ADA (2003)	FPG ≥ 7.0 (126)

FPG = fasting plasma glucose; 2-h PG = two-hour post-load plasma glucose (1 mmol/L = 18 mg/dL).

IGT can only be diagnosed by OGTT. OGTT is performed in the morning, after 8–14 h fast; one blood sample is taken before and one 120 min after intake of 75 g glucose dissolved in 250–300 mL water for 5 min (timing is from the beginning of the drink).

- Criterios adicionales
  - Autorreporte
  - Consumo de algún medicamento para tratar DM

Task Force Members. European Heart Journal 2007. 28:88-136

Prevalence of diabetes mellitus in elderly people in Canada: report from the Canadian Study of Health and Aging

KENNETH ROCKWOOD[1,2], MENG-HEE TAN[3], STEPHEN PHILLIPS[4], IAN MCDOWELL[5]

Table 1. Prevalence of diabetes, by residence, for elderly people using information from all sources

Source	Prevalence, by residence		
	Community	Institution	All
Self-report	9.9%	NA	N/A
Self-report, adjusted for false-negatives	10.1%	NA	N/A
Self-report plus assessment	11.2%	17.2%	11.6%
Self-report plus clinical assessment on random plasma glucose >11.1 mmol/l	12.0%	17.5%	12.4%

NA, not available.

Estudio Transveral , n=10263
P<0.001

Age and Aging. 1998;27:573-577

Epidemiology/Health Services/Psychosocial Research
ORIGINAL ARTICLE

The Burden and Treatment of Diabetes in Elderly Individuals in the U.S.

- 2809 ancianos
  - 1999-2002
    - National Health and Nutrition Examination Survey (NHANES)
      - Estudio transversal ancianos no institucionalizados
        - USA
  - Diagnostico de DM
    - Conocedor de su diagnóstico
    - Glucosa ayunas >126 mg/dl

Selvin E, et al. Diabetes Care 2006. 29(11):2415-2419

Epidemiology/Health Services/Psychosocial Research
ORIGINAL ARTICLE

The Burden and Treatment of Diabetes in Elderly Individuals in the U.S.

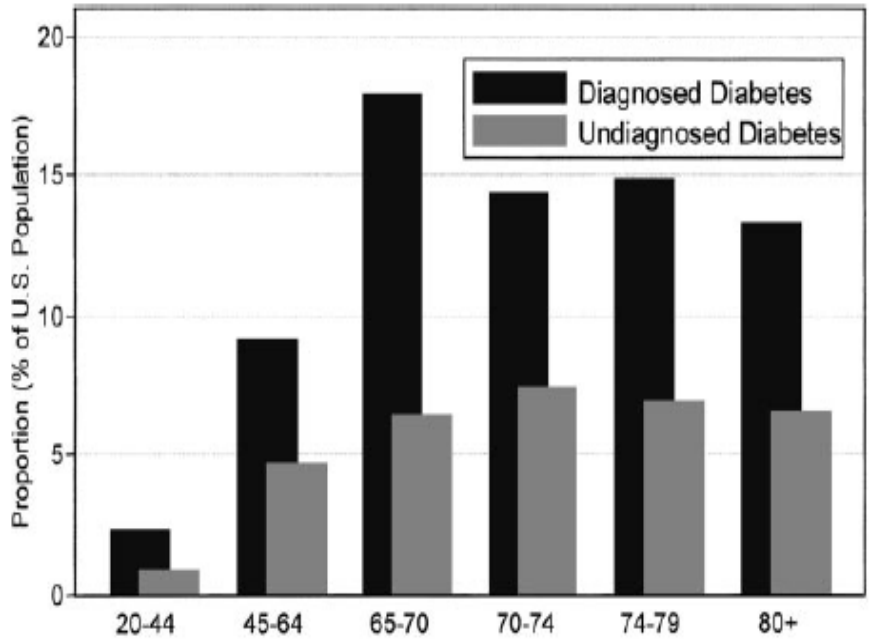


Figure 1—*Prevalence of undiagnosed and diagnosed diabetes by age-group, U.S. population, 1999–2002.*

- 21.6% con DM
- 15.8% tenían el diagnóstico previo de DM
  - 5.8% no diagnosticada
- 39.1% glucosa de ayuno alterada

Selvin E, et al. Diabetes Care 2006. 29(11):2415-2419

The Burden and Treatment of Diabetes in Elderly Individuals in the U.S.

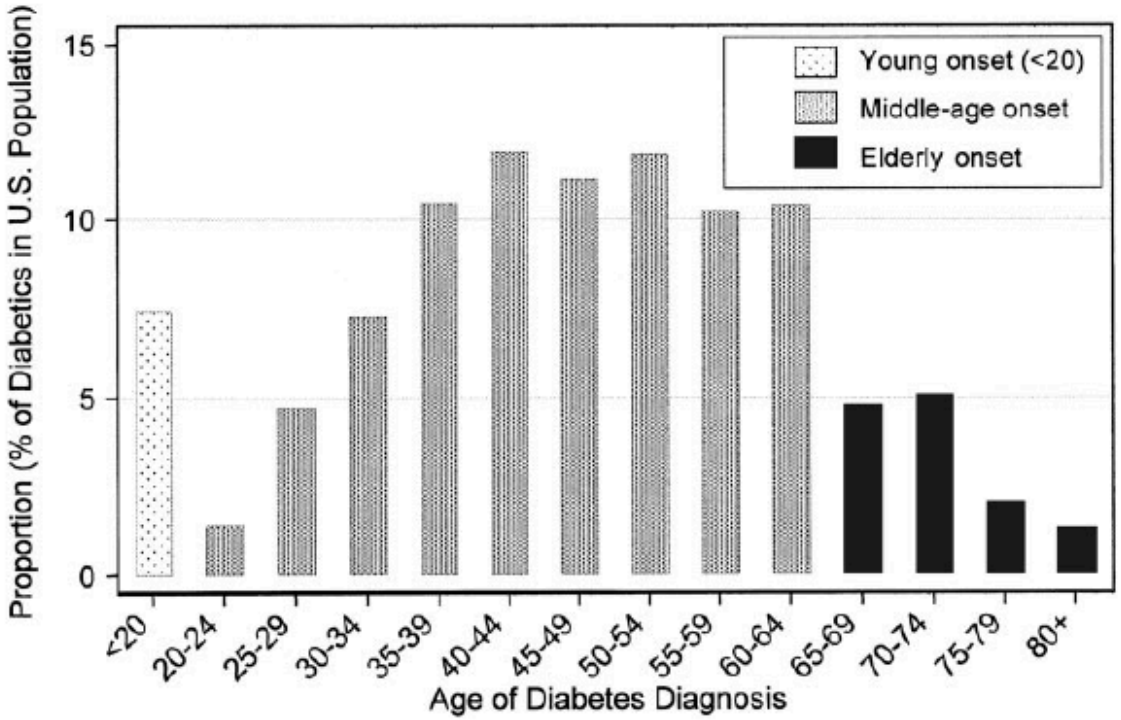


Figure 2—*Distribution of reported age of diabetes diagnosis in the U.S. population, 1999–2002.*

Selvin E, et al. Diabetes Care 2006. 29(11):2415-2419

The Burden and Treatment of Diabetes in Elderly Individuals in the U.S.

Table 2—*Selected clinical characteristics of middle aged and elderly adults with and without diabetes, NHANES 1999–2002*

	Middle aged (40–64 years)		Elderly (≥65 years)			
	No diabetes	Diabetes	No diabetes	Middle age–onset diabetes	Elderly onset diabetes	*P* value*
n	3,391	374	2,344	272	193	
Mean fasting glucose (mg/dl)	99.8 ± 0.6	148.9 ± 5.0	105.4 ± 1.2	172.4 ± 11.1	132.3 ± 6.1	0.001
Mean A1C (%)	5.4 ± 0.02	7.7 ± 0.2	5.6 ± 0.02	7.4 ± 0.1	6.9 ± 0.2	0.011
A1C >7%	1.4 ± 0.3	55.3 ± 3.3	2.1 ± 0.4	59.9 ± 4.2	41.6 ± 4.5	0.005
A1C >8%	0.8 ± 0.2	36.7 ± 3.5	0.9 ± 0.3†	27.9 ± 4.7	20.2 ± 4.6	0.149

Selvin E, et al. Diabetes Care 2006. 29(11):2415-2419

The Prevalence of Diabetes among the Elderly in Seven Countries of Latin America and the Caribbean (LAC): The *Health, Wellbeing and Ageing* (SABE) Project

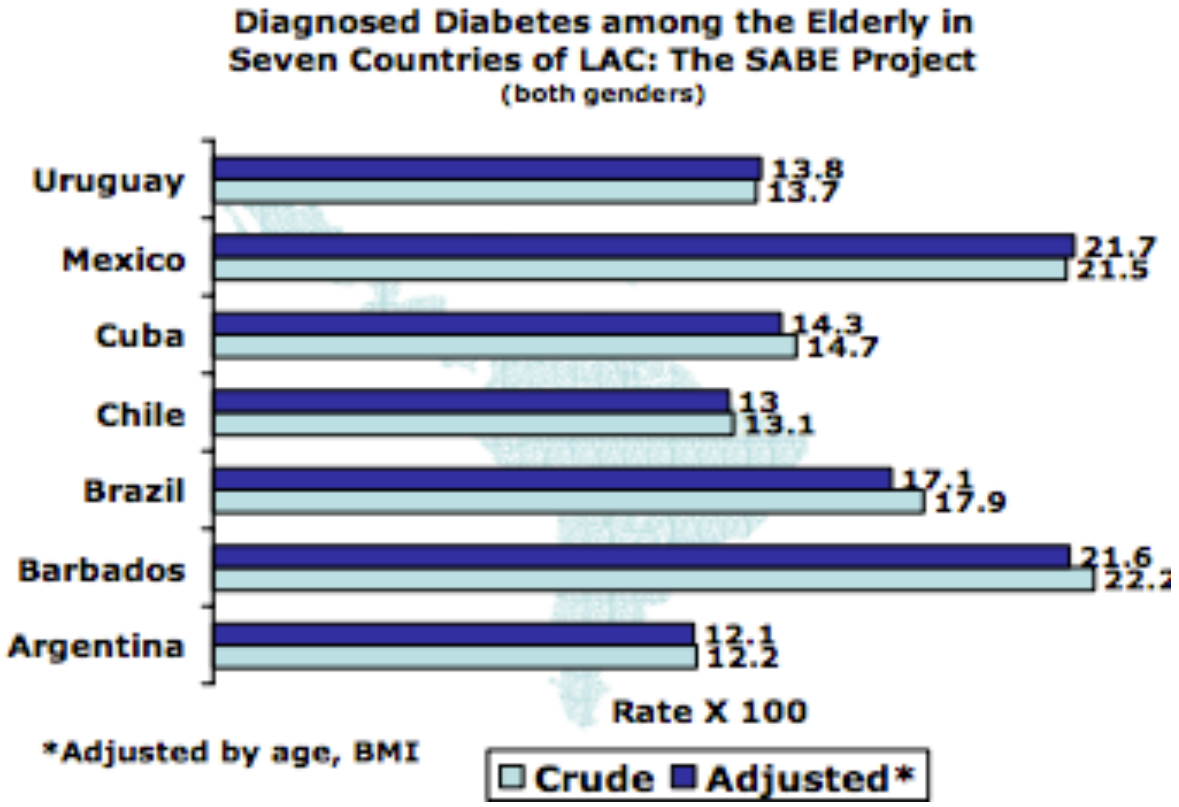
Barceló, Alberto; Pelaez, Martha; Rodriguez-Wong, Laura; Meiners, Micheline.

- Datos obtenidos del proyecto "Salud Bienestar y Envejecimiento (SABE)"
  - Datos de ancianos en LA y Caribe 1999-2004
  - Participantes
    - 13753
      - 5350 hombres
      - 7676 mujeres

J Aging Health. 2006; 18: 224-239

The Prevalence of Diabetes among the Elderly in Seven Countries of Latin America and the Caribbean (LAC): The *Health, Wellbeing and Ageing* (SABE) Project

Barceló, Alberto; Pelaez, Martha; Rodriguez-Wong, Laura; Meiners, Micheline.

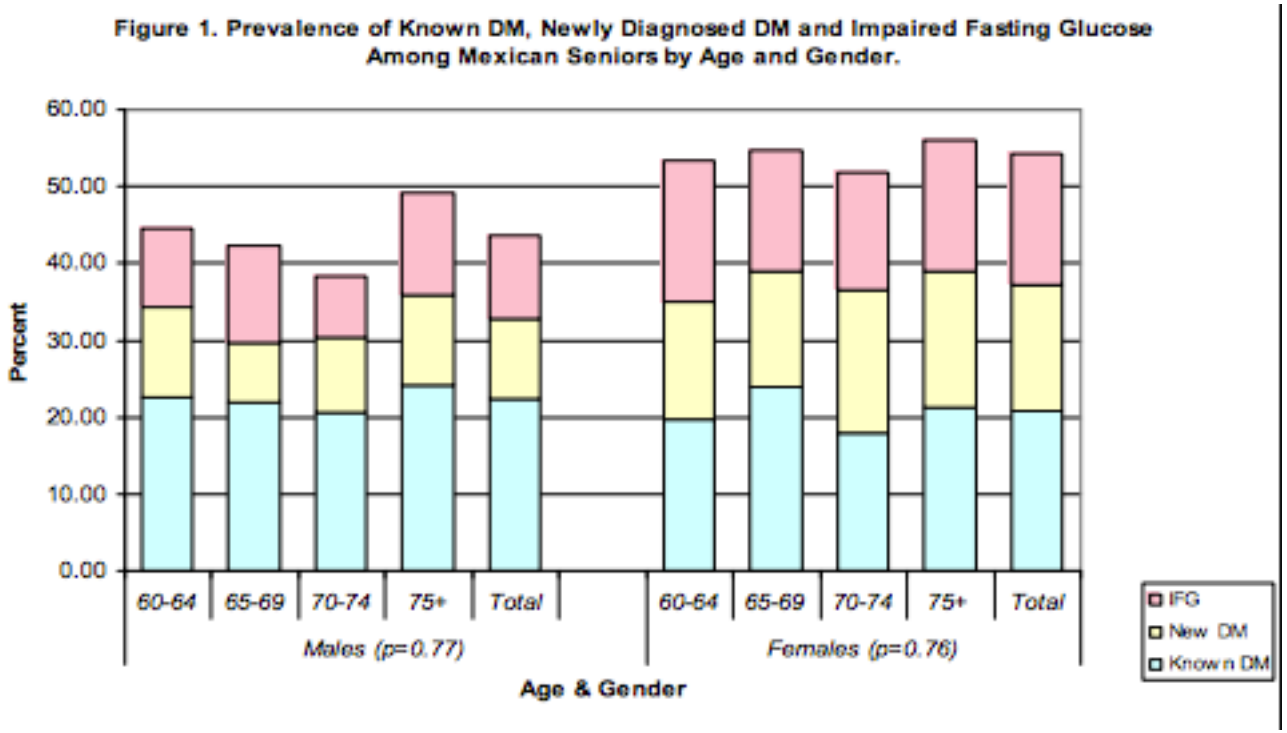


J Aging Health. 2006; 18: 224-239

The Prevalence of Diabetes among the Elderly in Seven Countries of Latin America and the Caribbean (LAC): The *Health, Wellbeing and Ageing* (SABE) Project

Barceló, Alberto; Pelaez, Martha; Rodriguez-Wong, Laura; Meiners, Micheline.

Figure 1. Prevalence of Known DM, Newly Diagnosed DM and Impaired Fasting Glucose Among Mexican Seniors by Age and Gender.



J Aging Health. 2006; 18: 224-239

Diabetes mellitus: fatores associados à prevalência em idosos, medidas e práticas de controle e uso dos serviços de saúde em São Paulo, Brasil

Tabela 1

Prevalência de diabetes mellitus segundo as variáveis demográficas e socioeconômicas em idosos 60 anos ou mais (n = 842). ISA-capital, São Paulo, Brasil, 2003.

Variável	n *	Prevalência (%)	RP bruta (IC95%)	Valor de p
Sexo				
Masculino	406	15,54	1,00	
Feminino	436	18,89	1,22 (0,88-1,68)	0,2196

Goldbaum M et al. Cad Saúde Publica, Rio de Janeiro. 2011: 27:573-577

Characteristics of undiagnosed diabetes in community-dwelling French elderly: The 3C study

I. Bourdel-Marchasson [a,b,*], C. Helmer [c], P. Barberger-Gateau [c], E. Peuchant [d], B. Février [e], K. Ritchie [f], J.-F. Dartigues [c]

- N= 8654
- Con DM = 9.6%
  - Sin diagnóstico previo de DM 14.9%
- Con IFG= 3.6%

Diabetes Research and Clinical Practice 76 (2007) 257–264

Differences in Diabetes Prevalence, Incidence, and Mortality Among the Elderly of Four Racial/Ethnic Groups: Whites, Blacks, Hispanics, and Asians

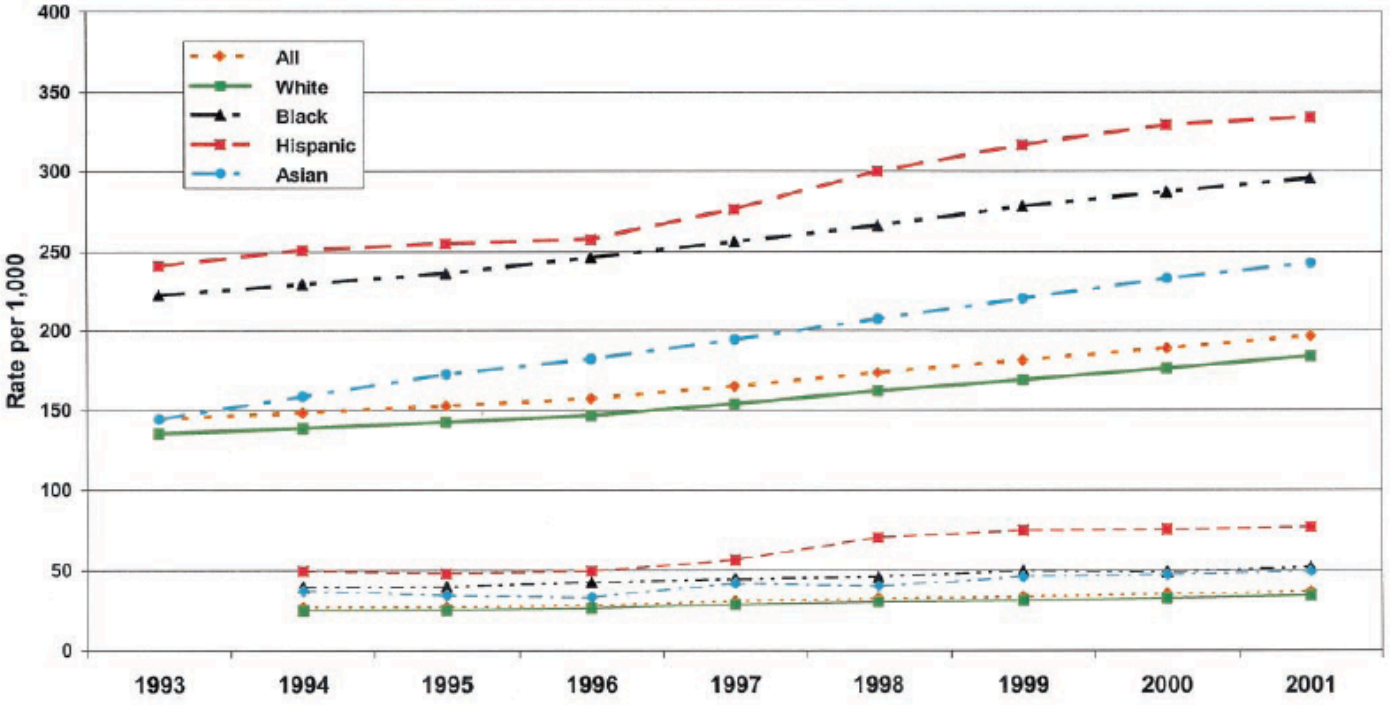


Figure 1—*Prevalence (upper series) and incidence (lower series) of diabetes per 1,000 elderly Medicare beneficiaries, 1993–2001.*

Medicare 1993-2001

Marshal A, et al. Diabetes Care 27:2317–2324, 2009

Global Burden of Diabetes, 1995–2025

Prevalence, numerical estimates, and projections

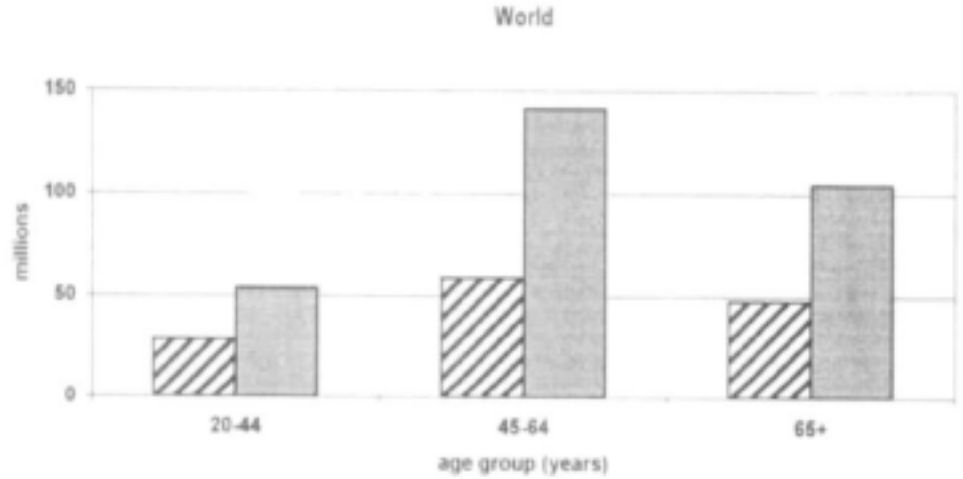


Figure 4—*Number of people with diabetes by age-group, year, and region.* ▨, *1995*; ■, *2025.*

King H. Diabetes Care 21:1414-1431,1998

Global Burden of Diabetes, 1995–2025

Prevalence, numerical estimates, and projections

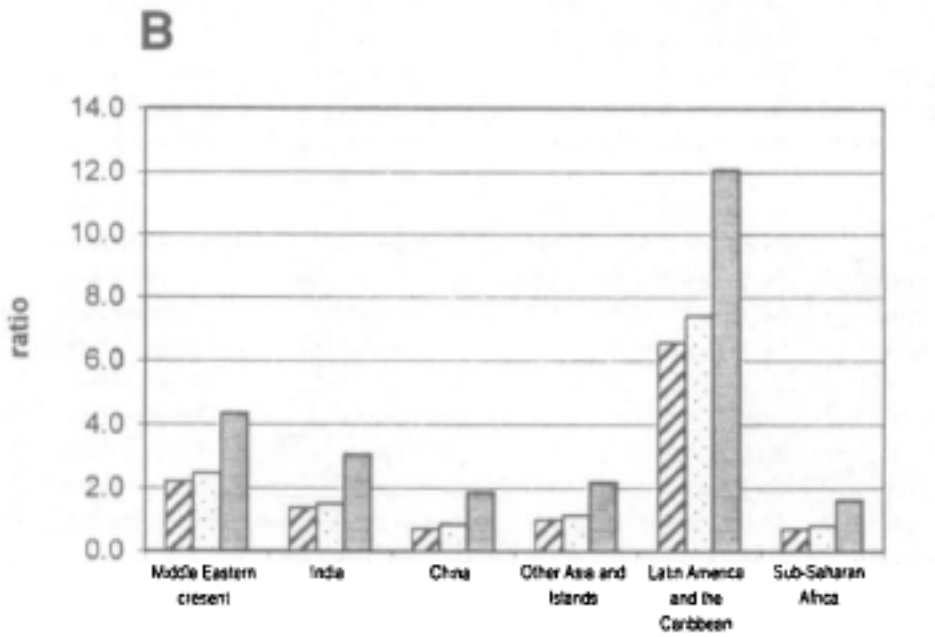


Figure 6—*Urban/rural ratio of number of people with diabetes by year and region. A: Developing countries.* B: *Major geographic areas.* ▨, *1995;* ▩, *2000;* ■, *2025.*

King H. Diabetes Care 21:1414-1431,1998

Global Burden of Diabetes, 1995–2025

Prevalence, numerical estimates, and projections

Table 1—*Top ten countries for estimated number of adults with diabetes, 1995 and 2025*

	Country	1995 (millions)	Country	2025 (millions)
Rank				
1	India	19.4	India	57.2
2	China	16.0	China	37.6
3	U.S.	13.9	U.S.	21.9
4	Russian Federation	8.9	Pakistan	14.5
5	Japan	6.3	Indonesia	12.4
6	Brazil	4.9	Russian Federation	12.2
7	Indonesia	4.5	Mexico	11.7
8	Pakistan	4.3	Brazil	11.6
9	Mexico	3.8	Egypt	8.8
10	Ukraine	3.6	Japan	8.5
All other countries		49.7		103.6
Total		135.3		300.0

King H. Diabetes Care 21:1414-1431,1998

ORIGINAL INVESTIGATION

Adipocytokines and Incident Diabetes Mellitus in Older Adults

The Independent Effect of Plasminogen Activator Inhibitor 1

Alka M. Kanaya, MD; Christina Wassel Fyr, MS; Eric Vittinghoff, PhD; Tamara B. Harris, MD; Seok Won Park, PhD; Bret H. Goodpaster, PhD; Fran Tylavsky, PhD; Steven R. Cummings, MD

- Sujetos del Health, Aging, and Body Composition Sutudy
  - n= 2356 adultos entre 70 a 79 años
  - Dx: autorreporte o CTOG o glucosa >126
  - Despúes de 5 años de seguimiento
    - 14,1/1000 personas año desarrollaron DM
      - Principalmente
        - Obesas (OR 1.33; IC 95% 1.1-1.60)
        - IMC elevado (OR 1.65; IC95% 1.26-2.15)

Arch Intern Med. 2006; 166:350-356

Original Article: Epidemiology

Incidence of Type 2 diabetes in the elderly German population and the effect of clinical and lifestyle risk factors: KORA S4/F4 cohort study

W. Rathmann*, K. Strassburger*, M. Heier*†, R. Holle‡, B. Thorandt†, G. Giani* and C. Meisinger†

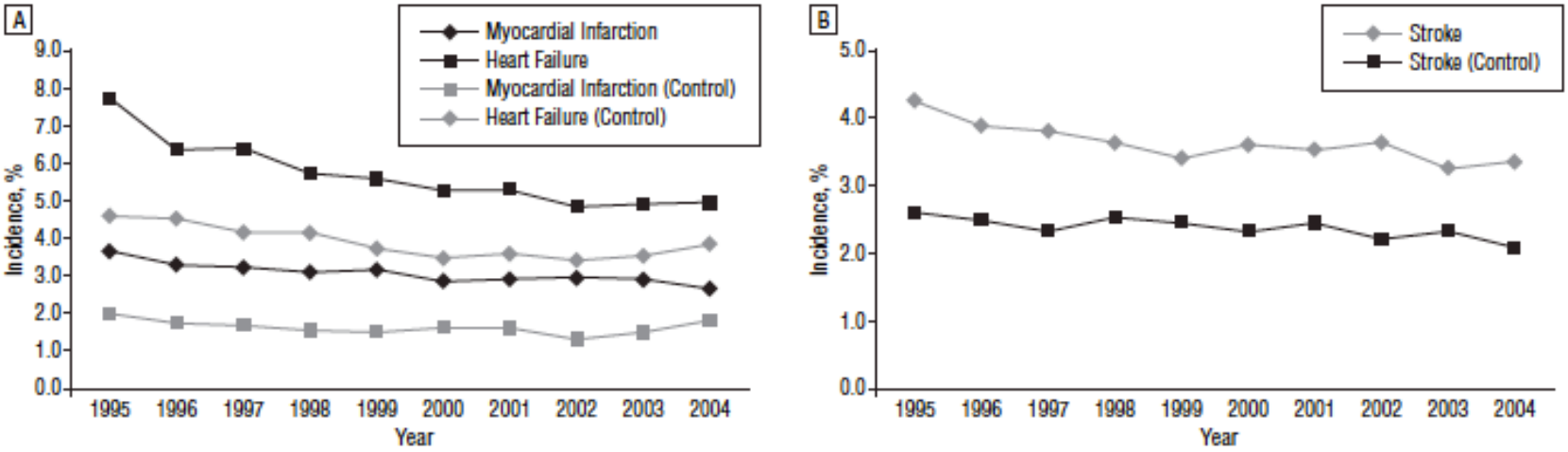
- 1653 sujetos de Augsburg y alrededores (en año 1999)
- CTOG de inicio
- Re-evaluación entre 2006-2008
- Dx de DM posterior
  - Autoreporte o por Médico Tratante
- Incidencia
  - 10.5%
    - Sobre todo los mas ancianos, obesos y con perfil metabólico

Diabet. Med. 2009 ; 26:1212-1219

ORIGINAL INVESTIGATION

Longitudinal Incidence and Prevalence of Adverse Outcomes of Diabetes Mellitus in Elderly Patients

M. Angelyn Bethel, MD; Frank A. Sloan, PhD; Daniel Belsky, BA; Mark N. Feinglos, MD, CM



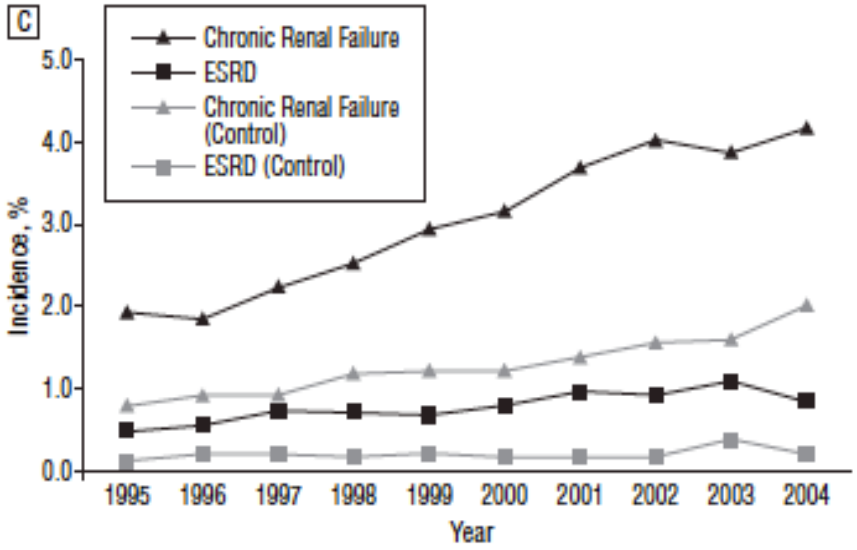
Medicare 1005-2004 , longitudinal
Casos: 33772
Controles:25565

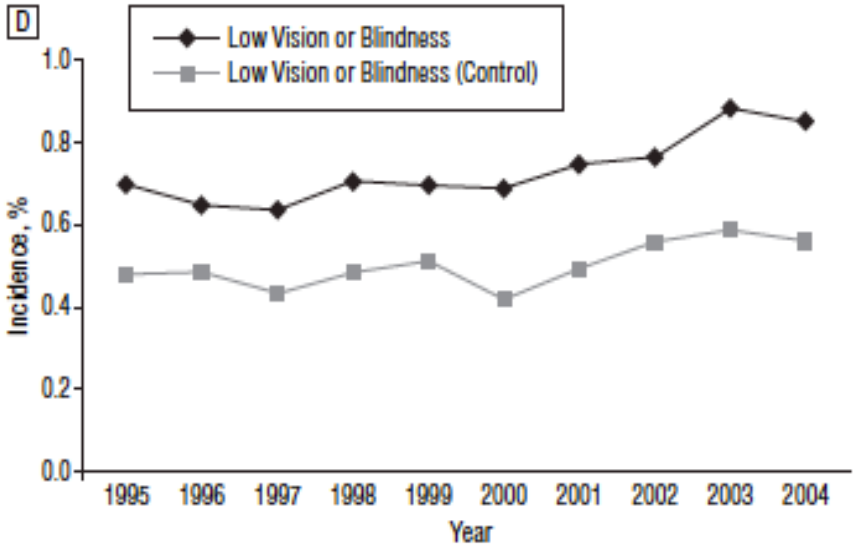
Arch Intern Med 2007; 167: 921-927

ORIGINAL INVESTIGATION

Longitudinal Incidence and Prevalence of Adverse Outcomes of Diabetes Mellitus in Elderly Patients

M. Angelyn Bethel, MD; Frank A. Sloan, PhD; Daniel Belsky, BA; Mark N. Feinglos, MD, CM





Arch Intern Med 2007; 167: 921-927

Conclusiones

- La DM aumentará
  - Prevalencia > 20%
  - Casos incidentes 15-20/1000 personas año.
- Datos actuales
  - Infraestimados
    - Por la forma de diagnóstico de DM
- Latino América será probablemente la más afectada
- La principal morbilidad asociada será por
  - IRCT y deterioro visual