ESTRATEGIAS DE OPTIMIZACIÓN FARMACOTERAPÉUTICA EN SITUACIONES CLÍNICAS CONTROVERTIDAS

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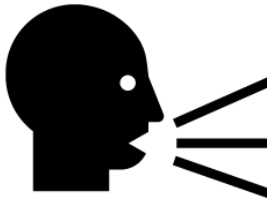
¿QUÉ VAMOS A VER?



1. **Consecuencias clínicas de la polimedicación y medicación inapropiada en el paciente crónico complejo.**

2. **Optimización general de la prescripción**

3. **Estrategias de optimización en situaciones clínicas concretas**

SITUANDO LA TERMINOLOGÍA

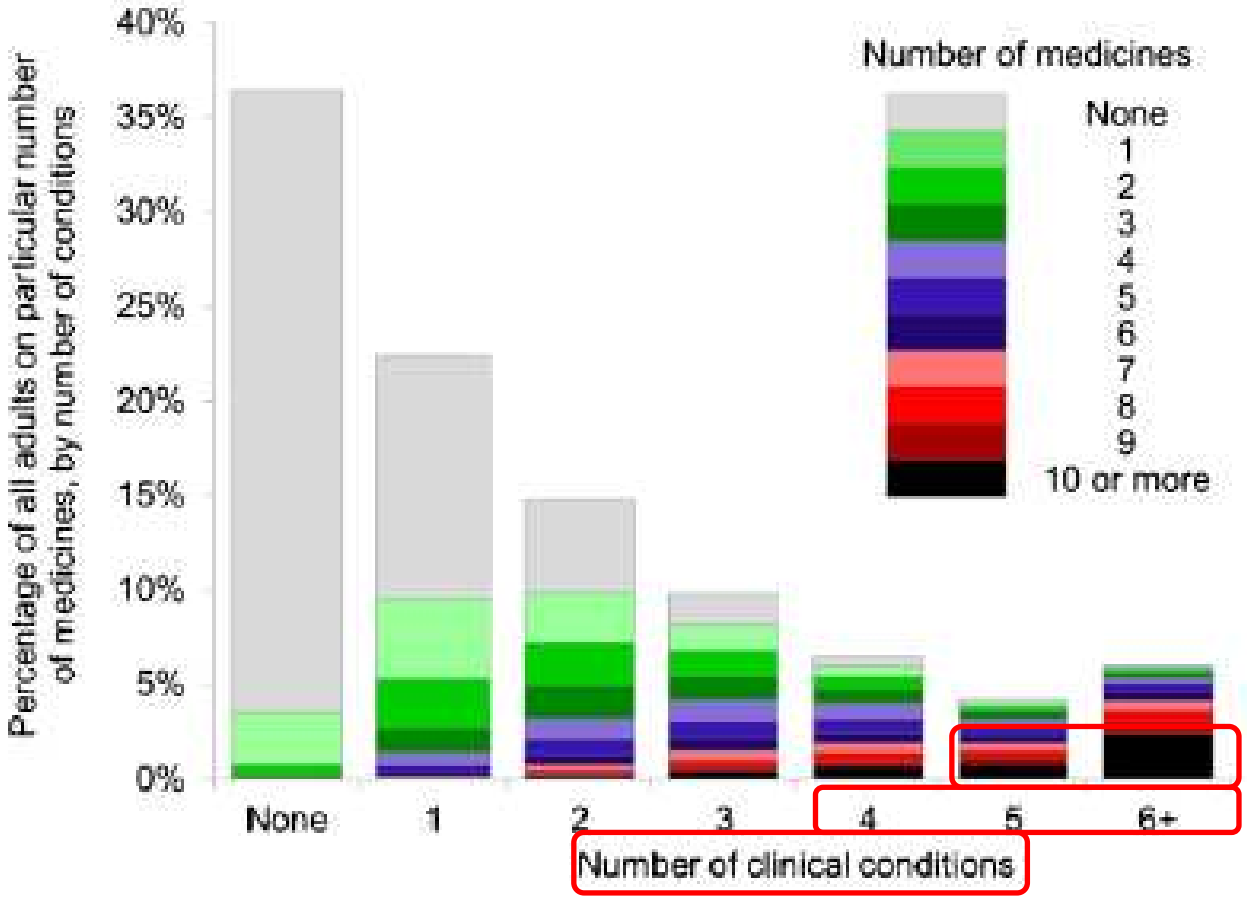
POLIFARMACIA

- CUANTITATIVA
  - MODERADA (5-9 fcos)
  - EXCESIVA - HIPERPOLIFARMACIA (≥ 10 fcos)
- CUALITATIVA
  - APROPIADA
  - INAPROPIADA

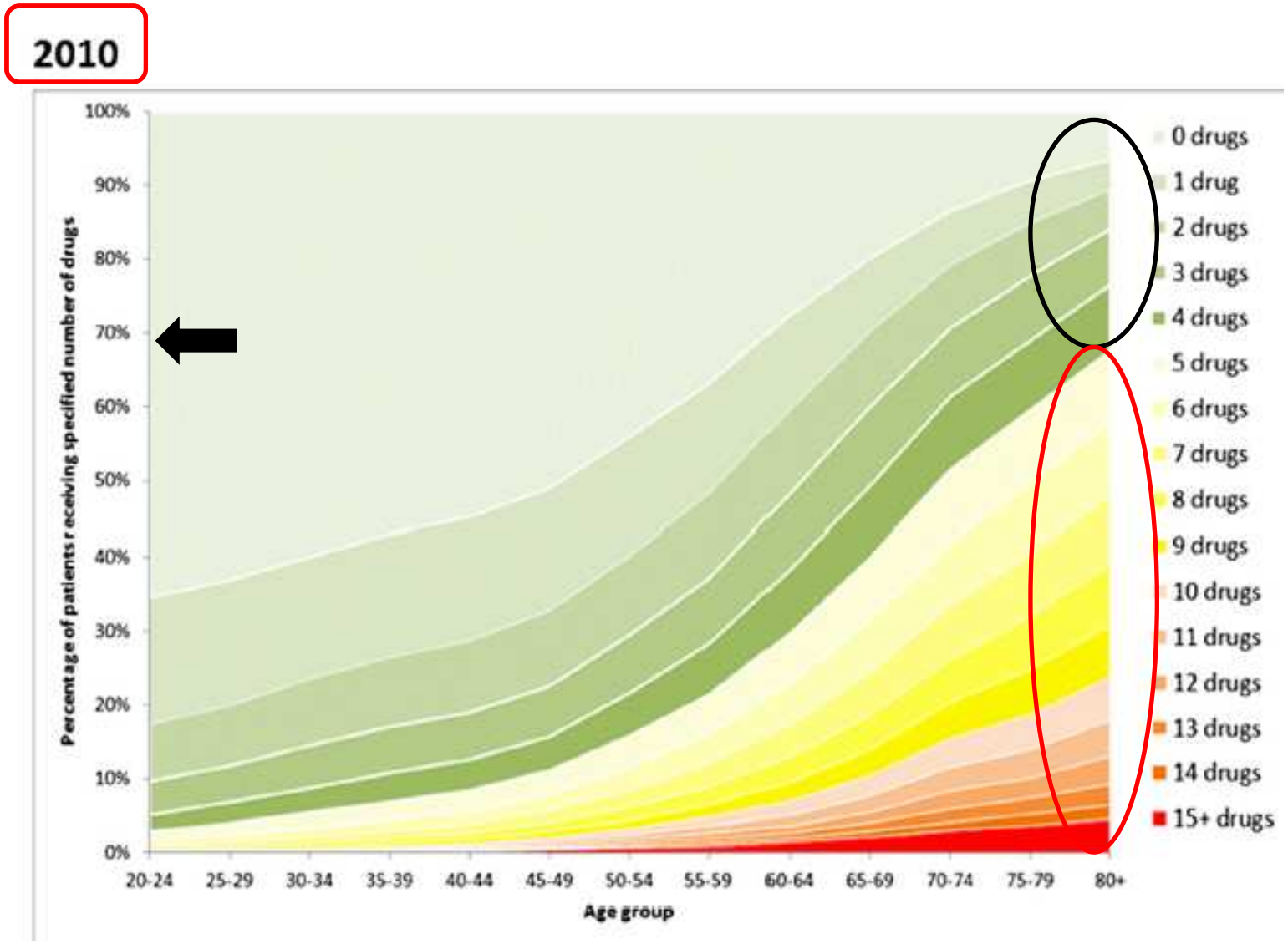
Polimedicación: epidemiología

Prevalence of polypharmacy in a Scottish primary care population

Eur J Clin Pharmacol (2014) 70:575–581



Polimedicación: epidemiología

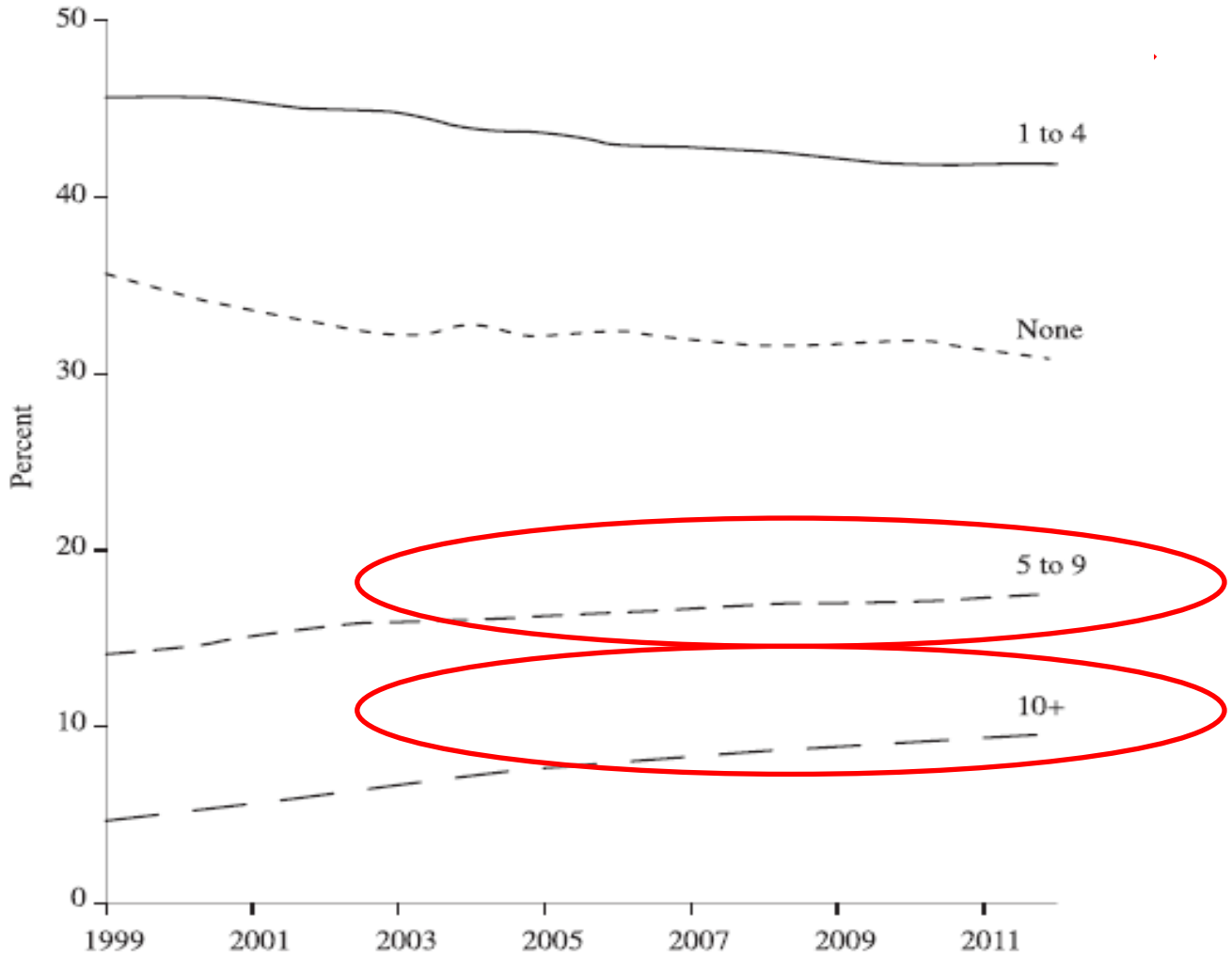


Polimedicación: epidemiología

Increasing use of prescription drugs in the United Kingdom

PHARMACOEPIDEMIOLOGY AND DRUG SAFETY 2016; 25: 628–636

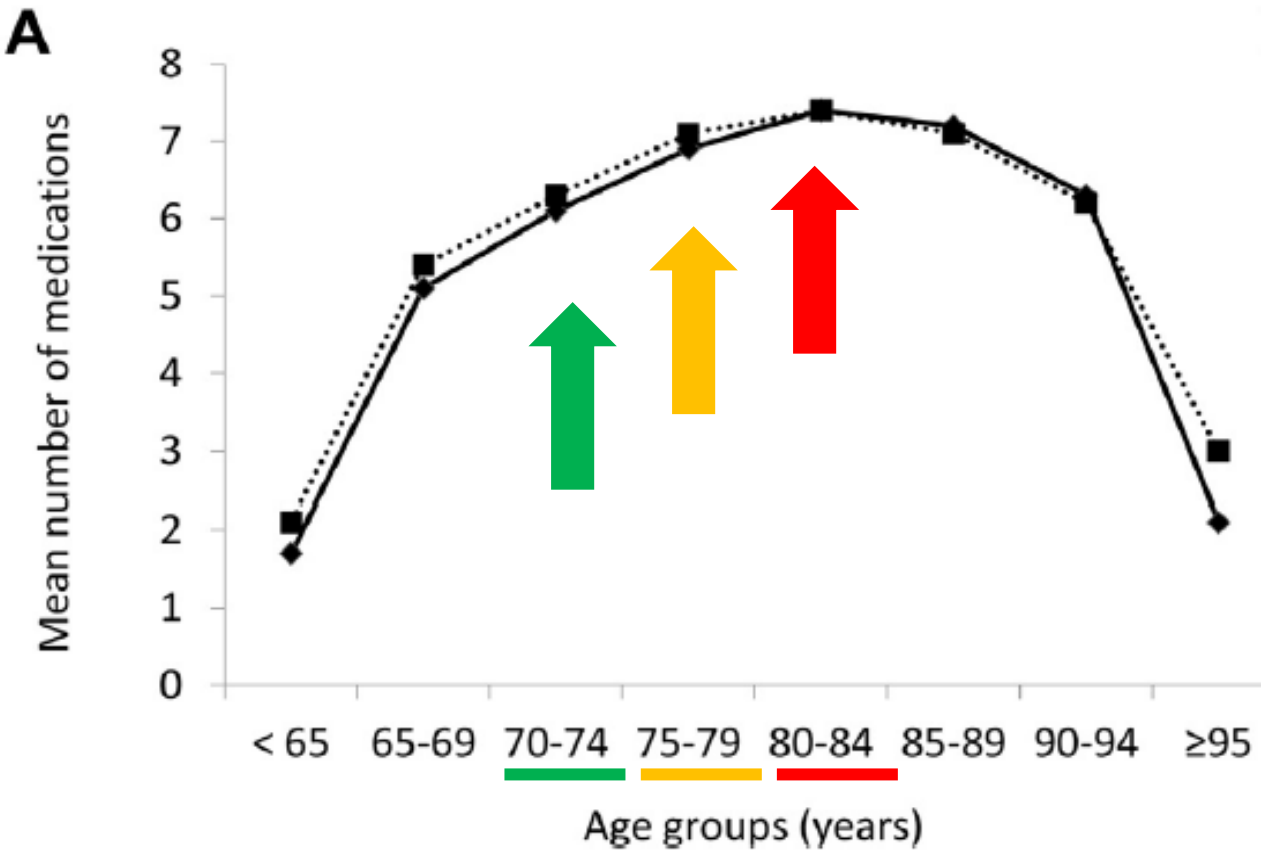
Frank Zhang[1], Ronac Mamtani[1,2], Frank I. Scott[1,2], David S. Goldberg[1,2], Kevin Haynes[1,3] and James D. Lewis[1,2]*



Polimedicación: epidemiología

Advanced Age and Medication Prescription: More Years, Less Medications? A Nationwide Report From the Italian Medicines Agency JAMDA 17 (2016) 168–172

Working Group of the Italian Medicines Agency (Agenzia Italiana del Farmaco, AIFA) on behalf of the Medicines Utilization Monitoring Center Health Database Network†

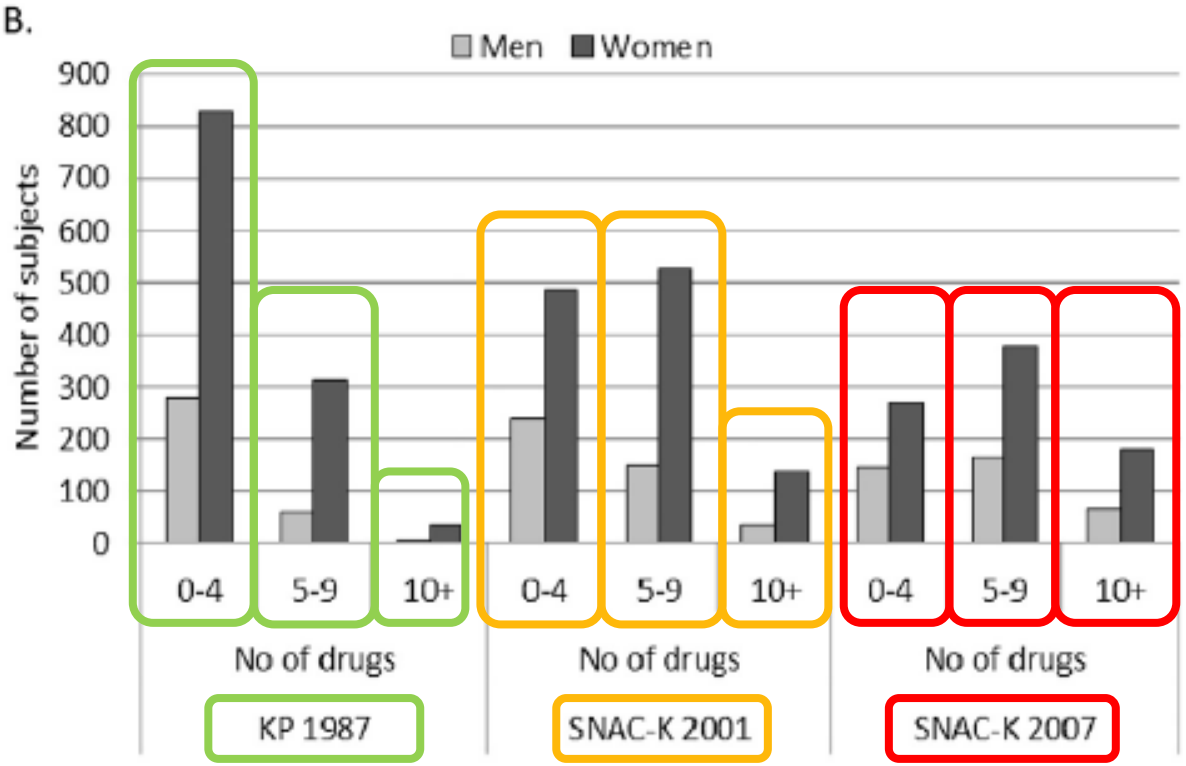


Polimedicación: epidemiología

Archives of Gerontology and Geriatrics

Archives of Gerontology and Geriatrics 63 (2016) 28–35

Time trends in 20 years of medication use in older adults: Findings from three elderly cohorts in Stockholm, Sweden

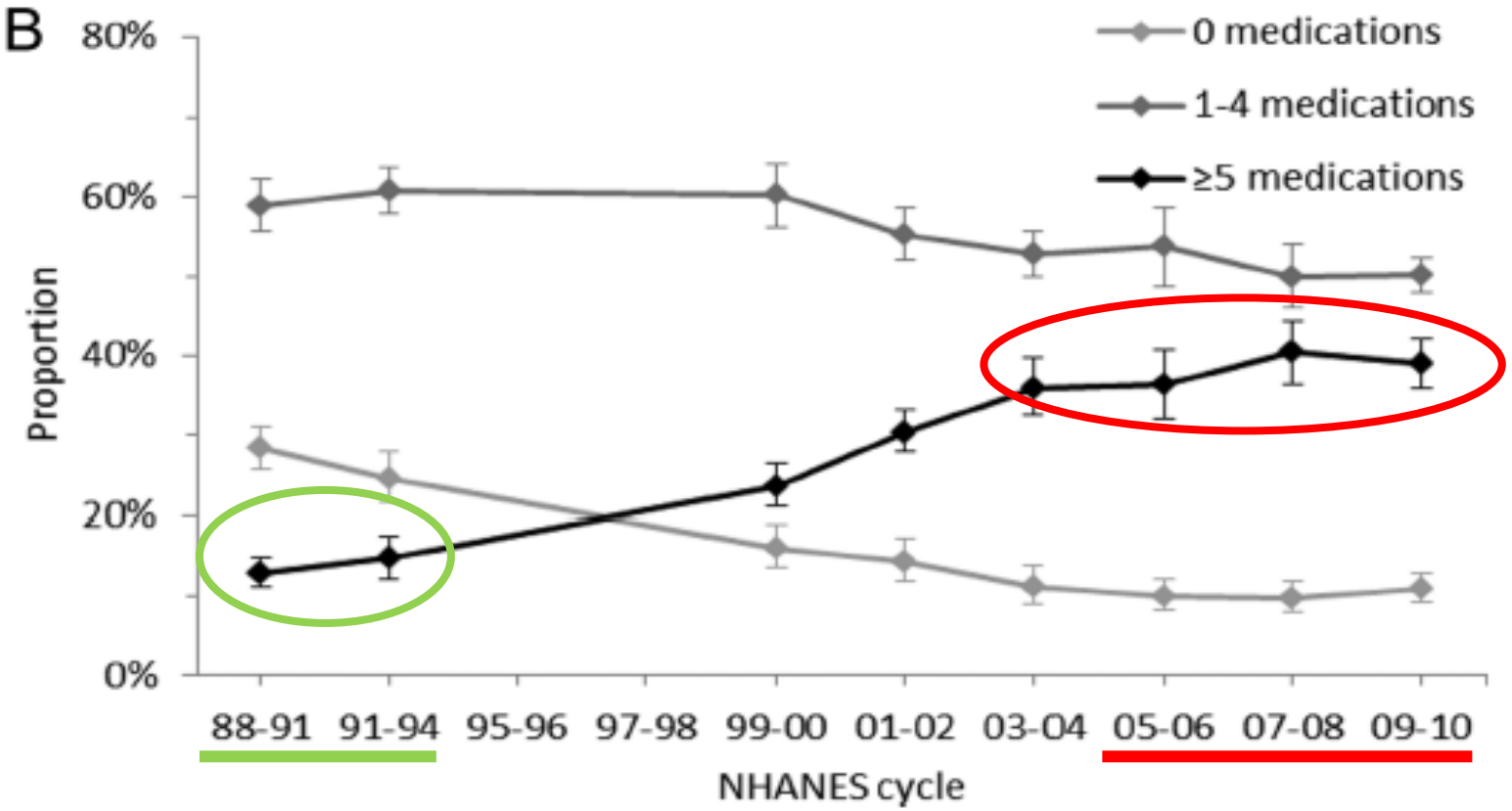


Polimedicación: epidemiología

Polypharmacy Among Adults Aged 65 Years and Older in the United States: 1988–2010

Christina J. Charlesworth,[1] Ellen Smit,[1] David S. H. Lee,[2] Fatimah Alramadhan,[1] and Michelle C. Odden[1]

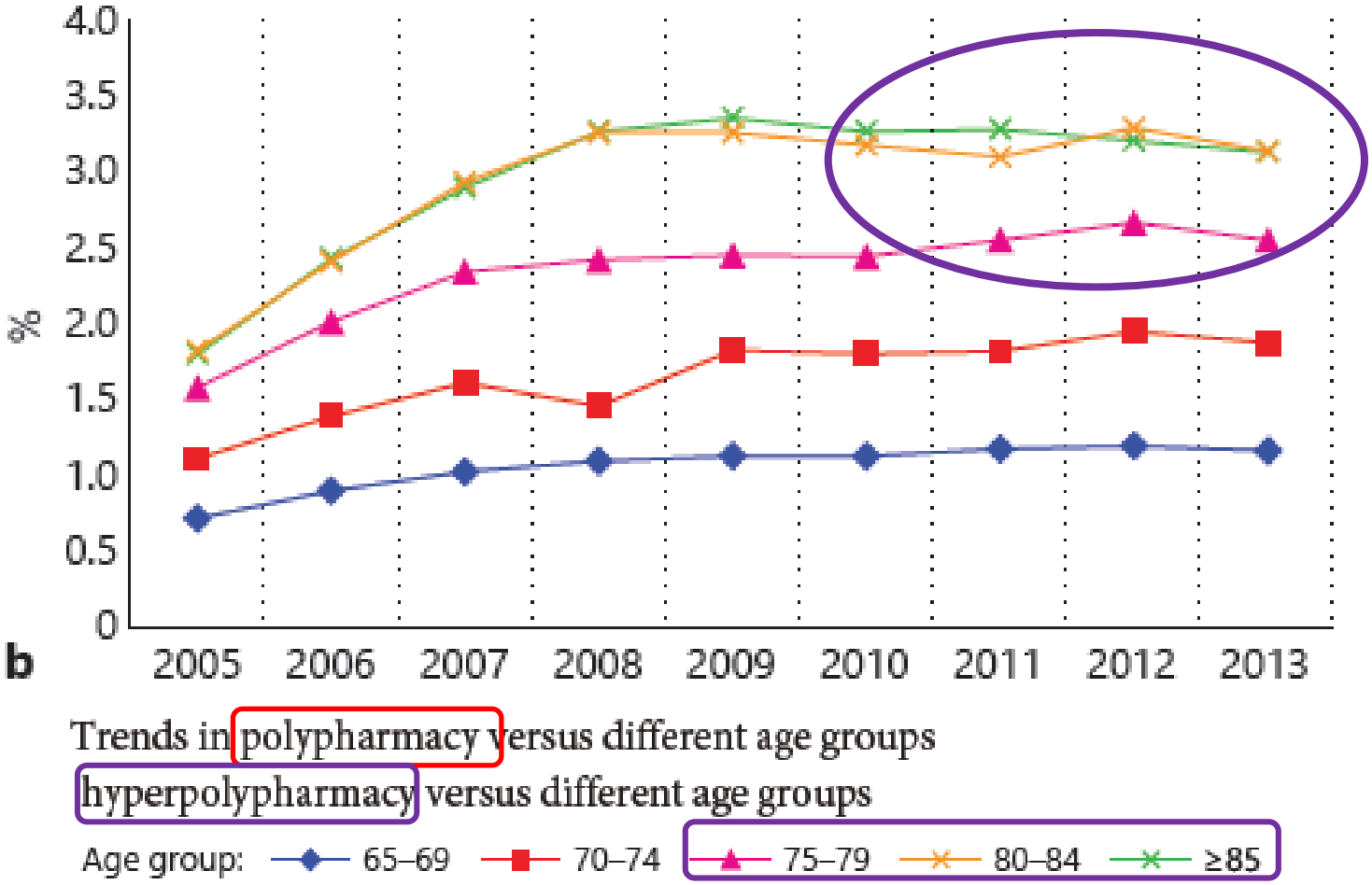
Journals of Gerontology: MEDICAL SCIENCES, 2015, 1–7
doi:10.1093/gerona/glv013



Polimedicación: epidemiología

Temporal Trends in Polypharmacy and Hyperpolypharmacy in Older New Zealanders over a 9-Year Period: 2005–2013

Gerontology 2015;61:195–202



Polimedicación y fragilidad

Searching for a Polypharmacy Threshold Associated With Frailty

JAMDA 16 (2015) 258–261

- N = 437. Edad media 83.0 ±6.1. 97.5 % comunitarios.

Table 1
Association of Frailty Status With Several Thresholds of Polypharmacy

No. of Drugs	Multivariate Analyses*		
	Odds Ratio	95% CI	*P*
≥4	1.46	0.90–2.38	.1
≥5	1.48	0.96–2.26	.07
≥6	2.03	1.34–3.08	.0008
≥7	1.66	1.10–2.51	.01
≥8	1.73	1.12–2.70	.01
≥9	2.16	1.30–3.60	.003
≥10	3.98	1.81–8.75	.0006
≥11	3.79	1.40–10.27	.009
≥12	3.39	0.98–11.77	.05

EL TAMAÑO SI QUE IMPORTA

In a multivariate model splitting polypharmacy (6–9 drugs) and hyperpolypharmacy (≥10 drugs) as compared with no polypharmacy (0–5 drugs), the odds ratios measuring the association with frailty were 1.66 (95% confidence interval [CI] 1.06–2.60, $P = .002$) for polypharmacy and 3.52 (95% CI 1.87–6.64, $P < .0001$) for hyperpolypharmacy.

Polimedicación,PPI & AAMs

High-Risk Prescribing and Incidence of Frailty Among Older Community-Dwelling Men

D Gnjidic[1–4], SN Hilmer[1–3], FM Blyth[3,4], V Naganathan[3,4], RG Cumming[3,4,5], DJ Handelsman[3,6], AJ McLachlan[4,7], DR Abernethy[8], E Banks[9] and DG Le Couteur[3,4]

CLINICAL PHARMACOLOGY & THERAPEUTICS | VOLUME 91 NUMBER 3 | MARCH 2012

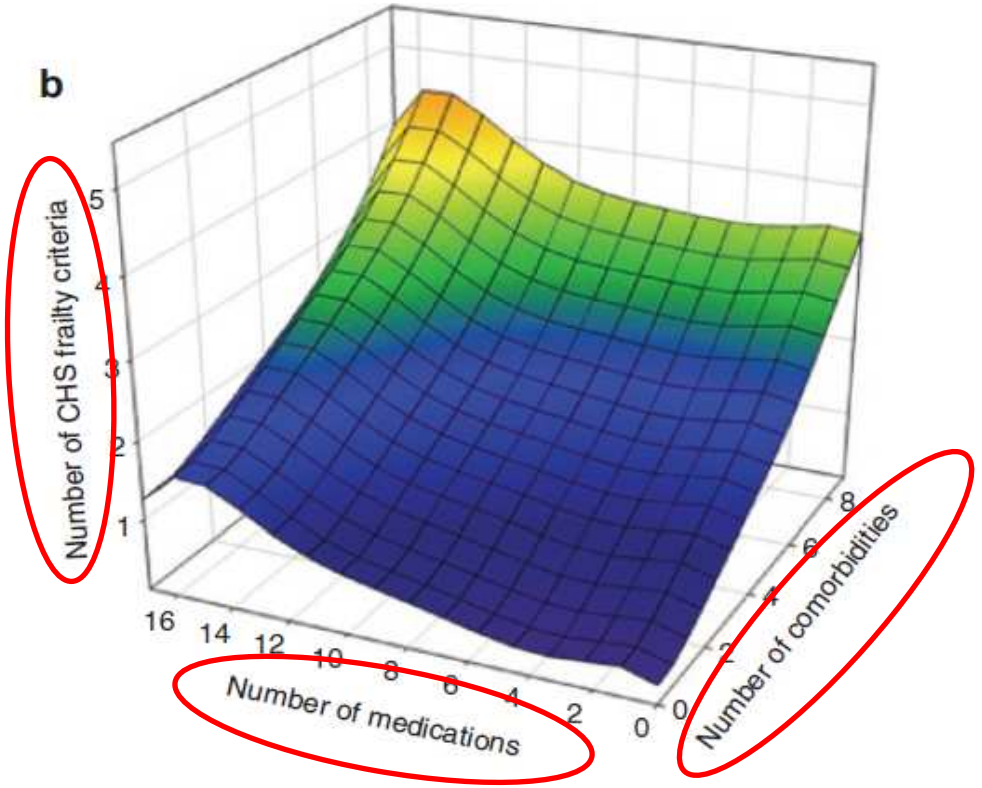


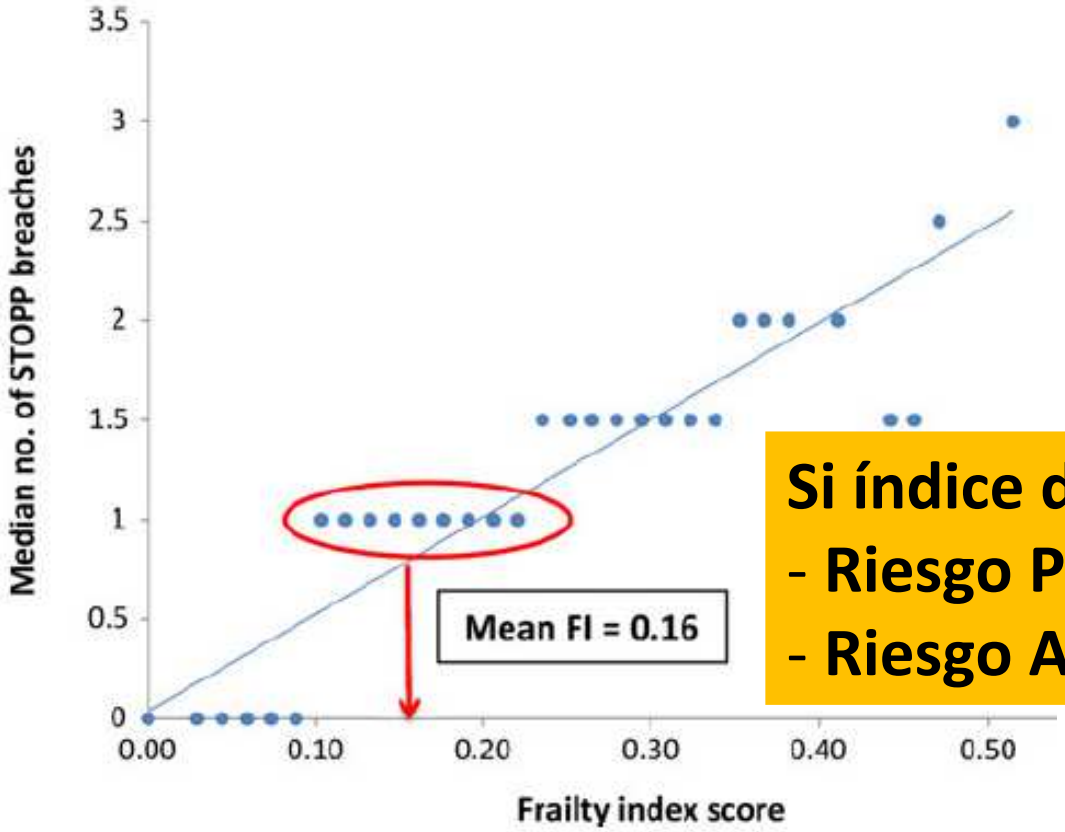
Figure 2 The relationships among (**a**) frailty, number of medications, and Drug Burden Index and (**b**) frailty, number of medications, and comorbidities at baseline. CHS, Cardiovascular Health Study frailty criteria; frail, 3–5 criteria; prefrail, 1–2 criteria; robust, 0 criteria.

Polimedicación, fragilidad, PPI & AAMs

Full Text (HTML)

Use of a frailty index to identify potentially inappropriate prescribing and adverse drug reaction risks in older patients

Age Ageing (2016) 45 (1): 115-120 first published online December 18, 2015



Si índice de fragilidad > 0.16):

- Riesgo PPI → 2.6

- Riesgo AAM → 2.1

Polimedicación, fragilidad, & AAMs

Adverse Outcomes in Relation to Polypharmacy in Robust and Frail Older Hospital Patients

Arjun Poudel PhD [a,b,*], Nancye M. Peel PhD [c], Lisa M. Nissen PhD [a,b], Charles A. Mitchell MBBS [b], Leonard C. Gray PhD [c], Ruth E. Hubbard MD [c]

Fig. 1. Relationship between polypharmacy, frailty, and (at least 1) adverse outcome. (Note: percentage of adverse outcomes refers to % within each polypharmacy category.)

Mayor peso predictor de AE con Índice fragilidad que con polifarmacia

Polimedicación, fragilidad y mortalidad

Polypharmacy and frailty: prevalence, relationship, and impact on mortality in a French sample of 2350 old people

PHARMACOEPIDEMIOLOGY AND DRUG SAFETY 2015; **24**: 637–646

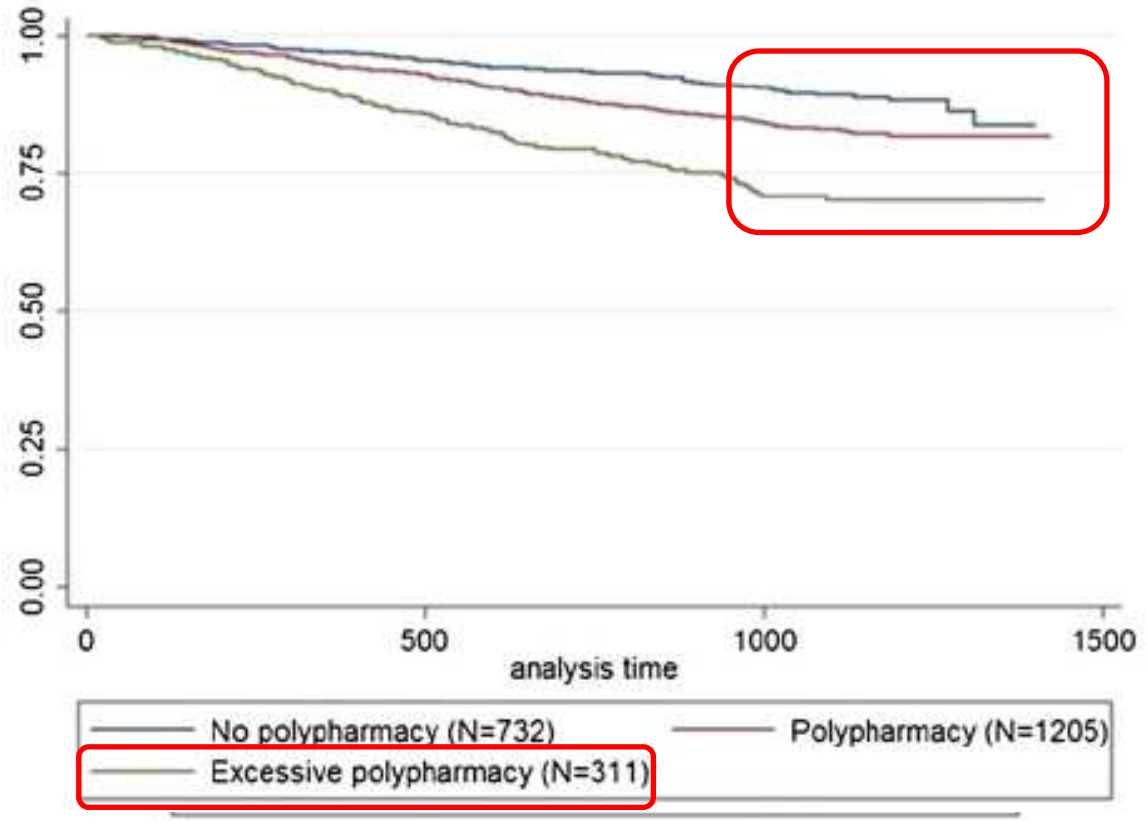


Figure 1. Kaplan–Meier survival estimates in participants of the SIPAF study according to the frailty status (A) and the level of polypharmacy (B)

Polimedicación, fragilidad y mortalidad

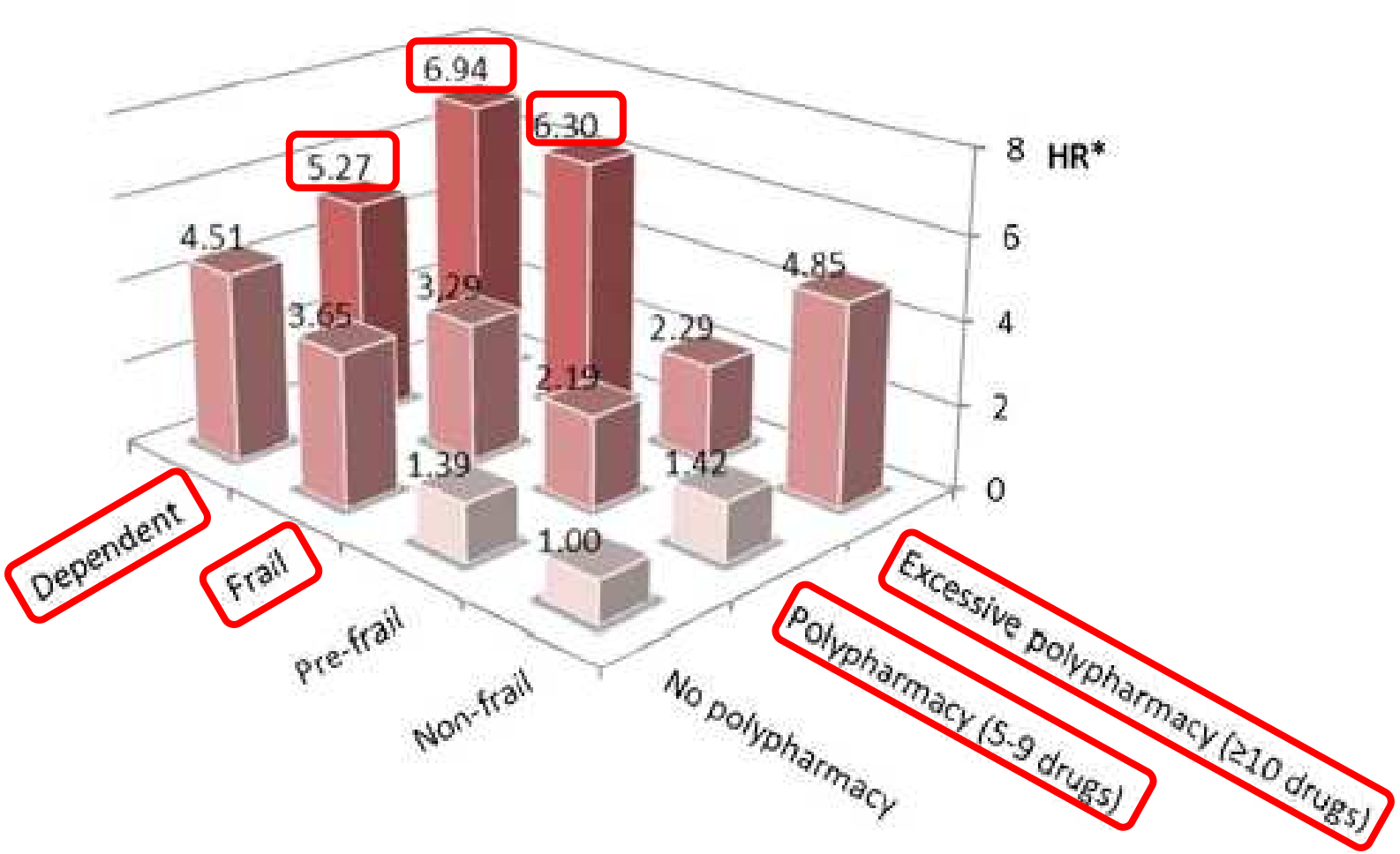


Figure 2. Mortality risk according to the combination of frailty and polypharmacy variables. *Hazard ratios (HR) adjusted for gender, age, comorbidity, cognitive impairment, and difficulty in IADL. *Legend*: Light colour: mortality risk not significantly different from 1; mild colour: significant increase in mortality risk; deep colour: significant increase in mortality risk higher than 5

Polimedicación y mortalidad

Polypharmacy in the Elderly: A Marker of Increased Risk of Mortality in a Population-Based Prospective Study (NEDICES) Gerontology 2015;61:301–309

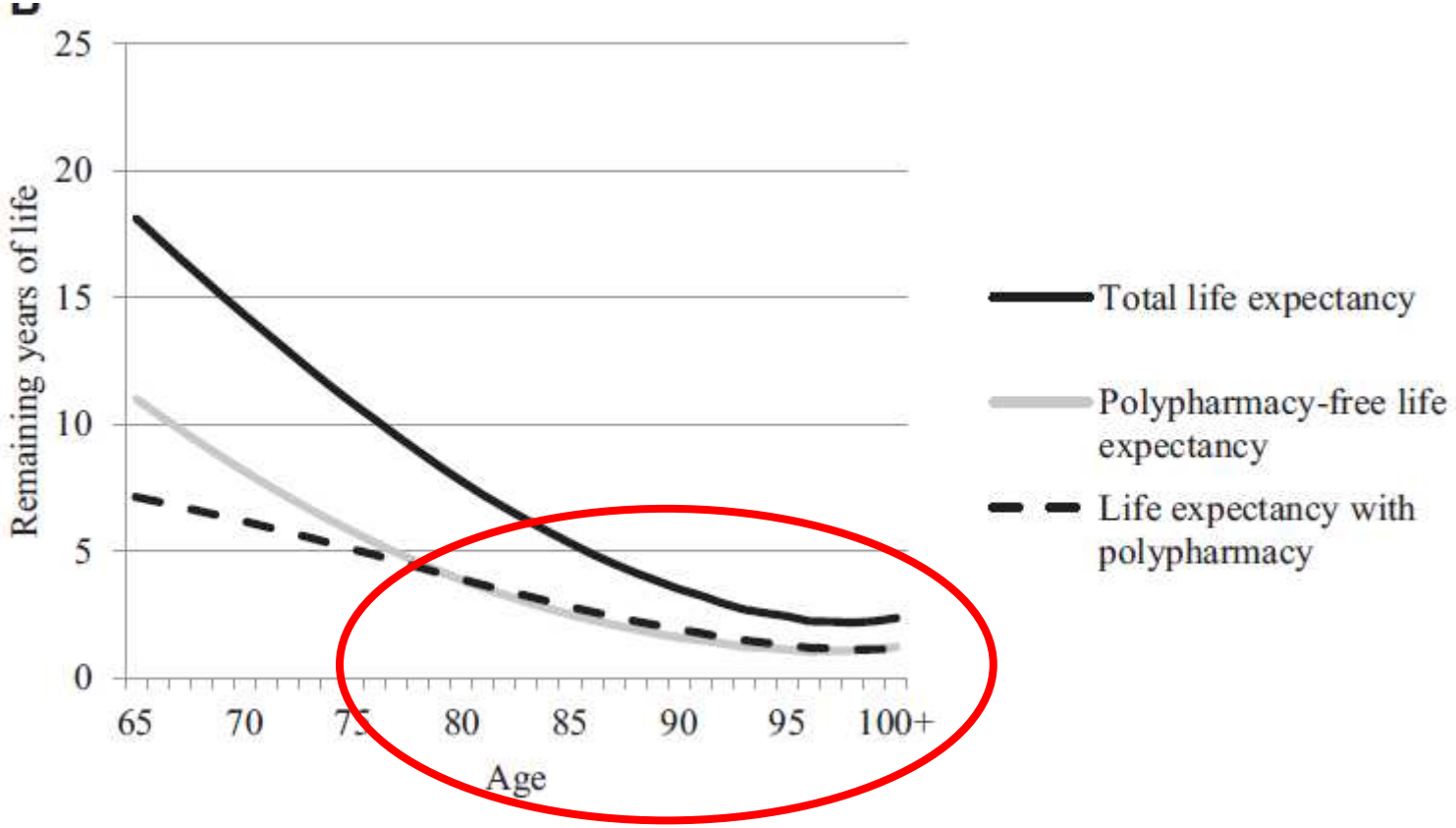
	Model 2		
	HR	95% CI	p
Daily number of drugs			
≥6	1.82	1.50–2.20	<0.001
1–5	1.31	1.15–1.50	<0.001
Nonmedicated (reference)	1.00	–	–
Age (years)	1.10	1.09–1.11	<0.001
Gender (women)	0.55	0.50–0.61	<0.001
Educational level			
Illiterate	1.03	0.86–1.23	0.757
Can read and write	0.99	0.86–1.14	0.894
Primary studies	0.97	0.83–1.12	0.654
≥Secondary studies, reference	1.00	–	–
Geographical area			
Lista	1.27	1.13–1.43	<0.001
Arévalo	0.98	0.88–1.10	0.760
Margaritas (reference)	1.00	–	–
Comorbidity index[a]	1.18	1.15–1.21	<0.001
PD	1.65	1.26–2.16	<0.001
Current smoker	1.34	1.17–1.54	<0.001
Current drinker	0.81	0.73–0.90	<0.001

Polimedicación y mortalidad

Remaining Life Expectancy With and Without Polypharmacy: A Register-Based Study of Swedes Aged 65 Years and Older

Jonas W. Wastesson PhD [a,b,*], Vladimir Canudas-Romo PhD [b], Rune Lindahl-Jacobsen PhD [b,c], Kristina Johnell PhD [a]

- N = 1.347.564.



Polimedicación y mortalidad

Polypharmacy Status as an Indicator of Mortality in an Elderly Population

Johanna Jyrkkä,[1,2,3] *Hannes Enlund,*[4] *Maarit J. Korhonen,*[1,5] *Raimo Sulkava*[1] and *Sirpa Hartikainen*[3,6,7]

Drugs Aging 2009; 26 (12): 1039-1048
1170-229X/09/0012-1039/$49.95/0

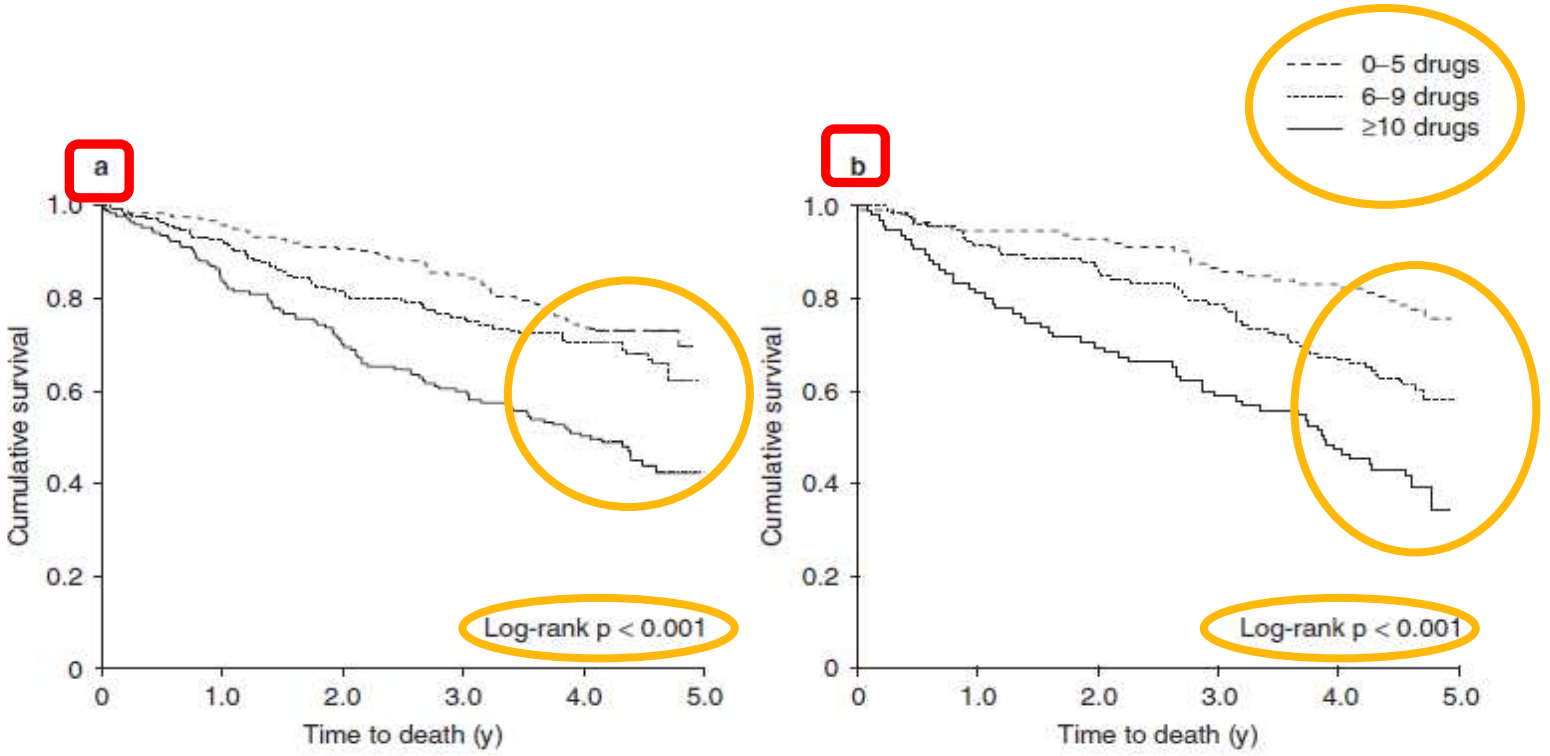
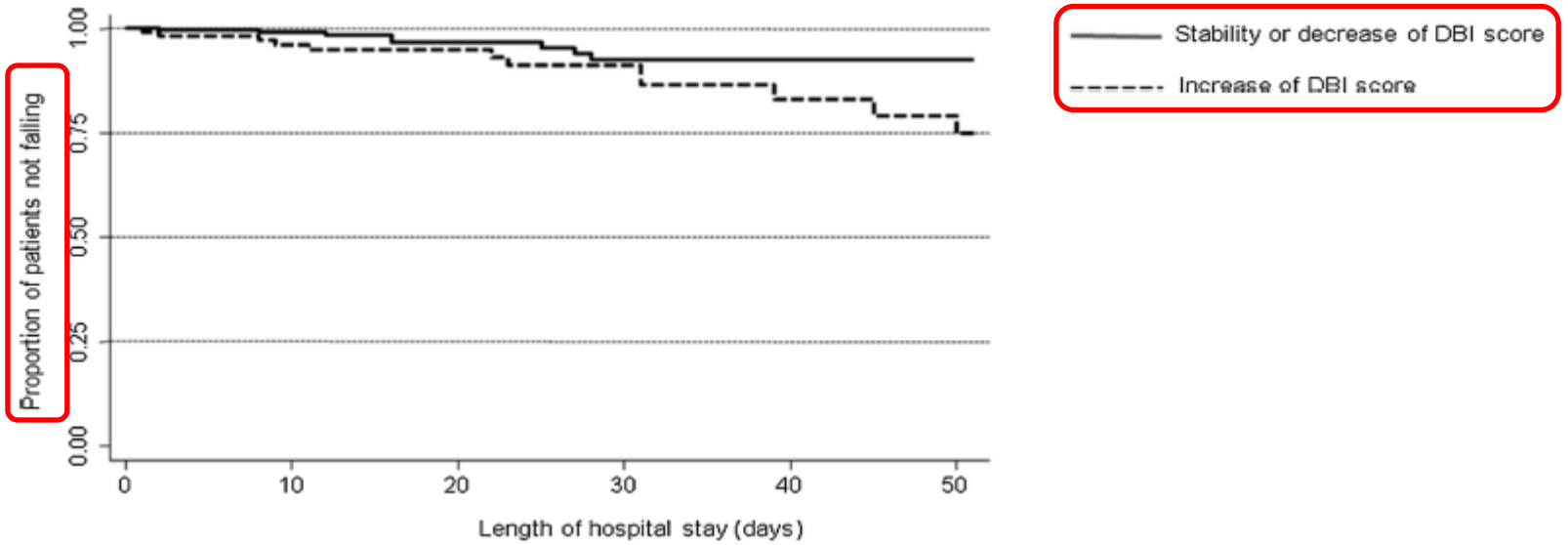


Fig. 1. Kaplan-Meier survival curves for excessive polypharmacy (ten or more drugs), polypharmacy (six to nine drugs) and non-polypharmacy (five or fewer drugs) groups in (**a**) the first phase (n = 601, aged ≥75 years) between 1998 and 2002 and (**b**) the second phase (n = 339, aged ≥80 years) between 2003 and 2007

CONSECUENCIAS CLÍNICAS DE LA POLIMEDICACIÓN Y MEDICACIÓN INAPROPIADA EN EL PACIENTE CRÓNICO COMPLEJO

Carga Anticolinérgica y resultados en salud

Exposure to Anticholinergic and Sedative Drugs, Risk of Falls, and Mortality *An Elderly Inpatient, Multicenter Cohort* (*J Clin Psychopharmacol* 2014;34: 565–570)



Cumulative Use of Strong Anticholinergics and Incident Dementia A Prospective Cohort Study

JAMA Intern Med. 2015;175(3):401-407.

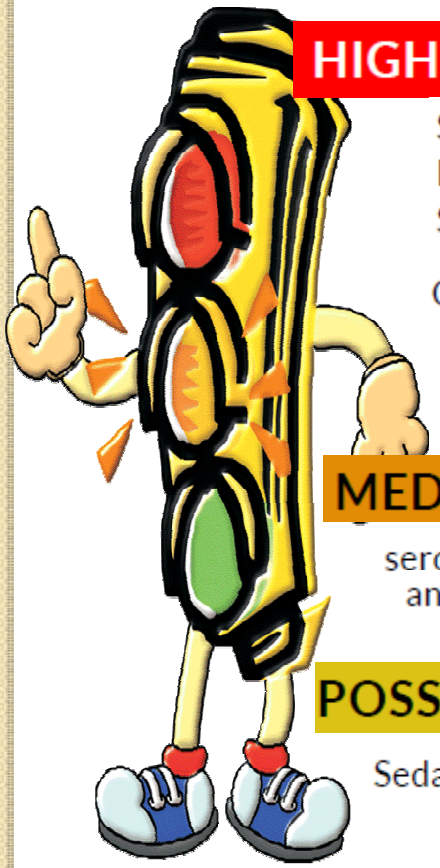
Association of Incident Dementia and AD With 10-Year Cumulative Anticholinergic Use[a]

Diagnosis, TSDD[b]	Follow-up Time, Person-years	Adjusted[d,e]
Dementia		
0	5618	1 [Reference]
1-90	7704	0.92 (0.74-1.16)
91-365	5051	1.19 (0.94-1.51)
366-1095	2626	1.23 (0.94-1.62)
>1095	4022	1.54 (1.21-1.96)

AD	Follow-up Time, Person-years	Adjusted[d,e]
0	5618	1 [Reference]
1-90	7704	0.95 (0.74-1.23)
91-365	5051	1.15 (0.88-1.51)
366-1095	2626	1.30 (0.96-1.76)
>1095	4022	1.63 (1.24-2.14)

How medicines can cause falls

- Sedation, drowsiness
- Confusion
- Vestibular damage (tinnitus, deafness)
- Hypoglycaemia
- Dehydration
- Orthostatic hypotension
- Visual impairment (blurred vision, dry eyes)
- Impaired postural stability
- Hypothermia
- Drug induced Parkinsonism



HIGH RISK OF FALLS EITHER ALONE OR IN COMBINATION

Sedatives:
Benzodiazepines
Sedatives: "Zs"

Opiate analgesics

Parkinson's disease (PD):

Sedating antidepressants (tricyclics and related drugs)
Anti-epileptics
Ropinirole, pramipexole

Drugs for psychosis and agitation
Phenytoin
Carbamazepine
Selegiline

Serotonin and norepinephrine reuptake inhibitor (SNRI) antidepressants

Alpha receptor blockers

MEDIUM RISK OF FALLS ESPECIALLY IN COMBINATION

serotonin inhibitor antidepressants

Muscle relaxants
Baclofen, dantrolene

Anti-epileptics
valproate, gabapentin

POSSIBLE RISK OF FALLS PARTICULARLY IN COMBINATION

Sedating antihistamines for allergy

Acetylcholinesterase inhibitors (for dementia)

Cause syncope.

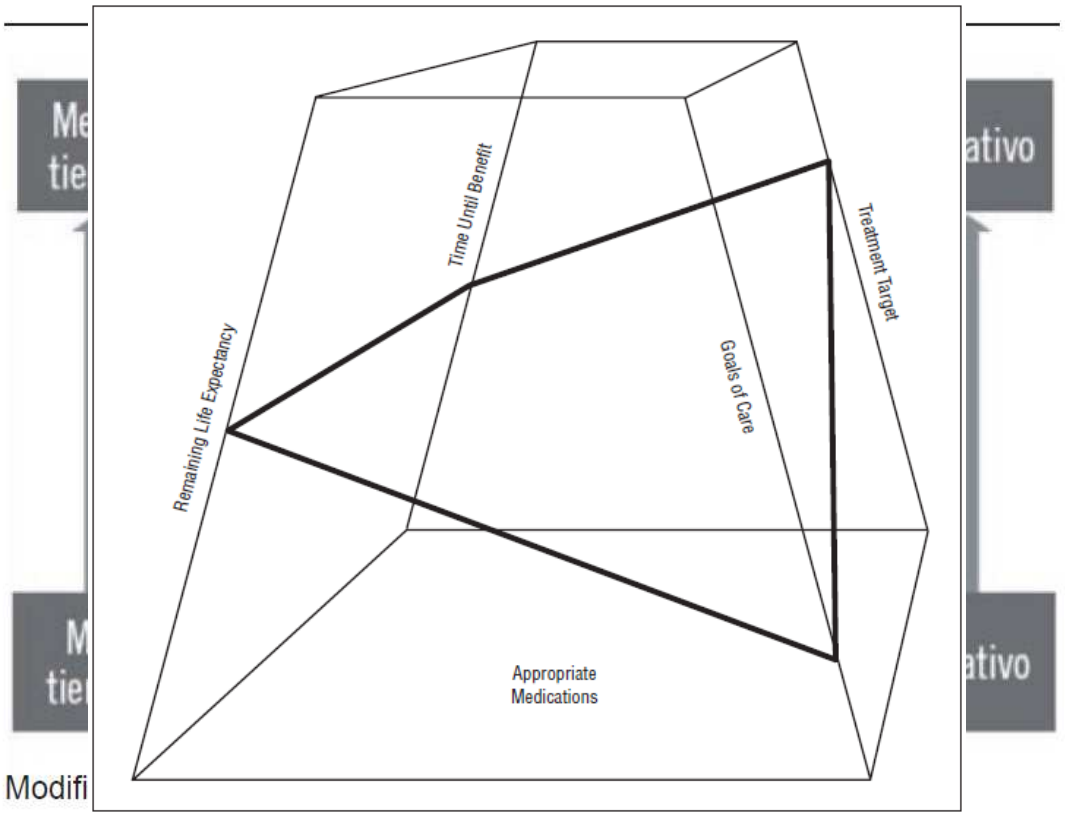
OPTIMIZACIÓN GENERAL DE LA PRESCRIPCIÓN

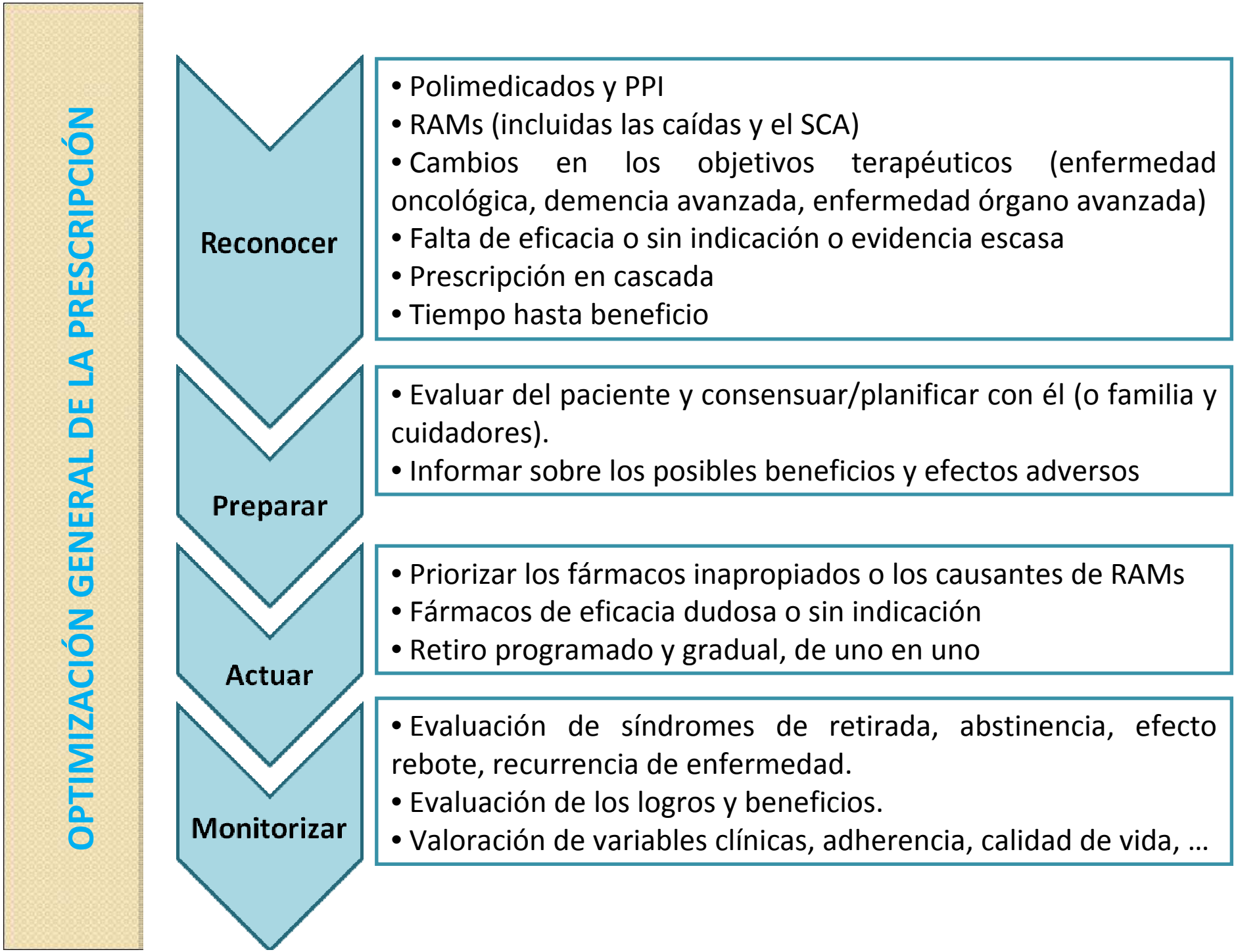
Adecuación terapéutica y desprescripción

Reducing Inappropriate Polypharmacy The Process of Deprescribing

JAMA Intern Med. 2015;175(5):827-834.

"…proceso planificado, estandarizado y de revaloración continua, de cambio de orientación terapéutica, en el que el plan farmacoterapéutico de los pacientes se ajustan a sus necesidades (prescripción centrada en el paciente), lo que frecuentemente conlleva un cambio en el número y tipo de fármacos (deprescripción cuantitativa y cualitativa)…"




OPTIMIZACIÓN GENERAL DE LA PRESCRIPCIÓN
Reconocer
• Polimedicados y PPI
• RAMs (incluidas las caídas y el SCA)
• Cambios en los objetivos terapéuticos (enfermedad oncológica, demencia avanzada, enfermedad órgano avanzada)
• Falta de eficacia o sin indicación o evidencia escasa
• Prescripción en cascada
• Tiempo hasta beneficio
Preparar
• Evaluar del paciente y consensuar/planificar con él (o familia y cuidadores).
• Informar sobre los posibles beneficios y efectos adversos
Actuar
• Priorizar los fármacos inapropiados o los causantes de RAMs
• Fármacos de eficacia dudosa o sin indicación
• Retiro programado y gradual, de uno en uno
Monitorizar
• Evaluación de síndromes de retirada, abstinencia, efecto rebote, recurrencia de enfermedad.
• Evaluación de los logros y beneficios.
• Valoración de variables clínicas, adherencia, calidad de vida, …

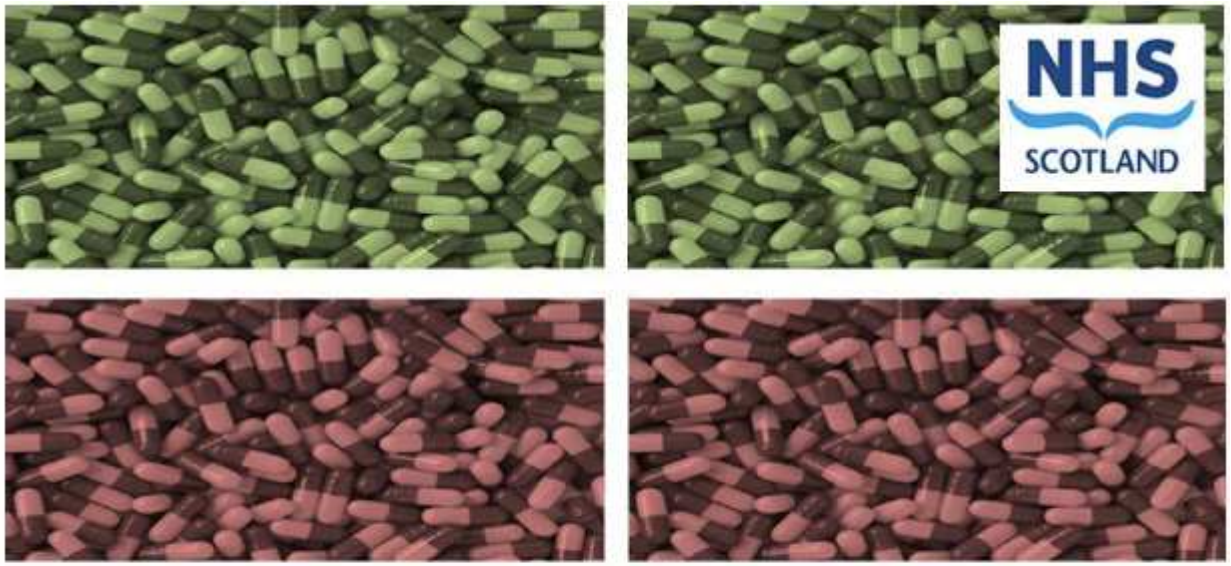
Tiempo hasta beneficio de los tratamientos

...tiempo hasta que sucede un evento significativo (positivo: TTB – *time to benefit*; negativo: TTH – *time to harm*) segun los ensayos clínicos...

...previamente hay que considerar el NNT *(number need to treat*) y el NNH *(number need to harm*) [matemáticamente es la inversa de RAR – reducción absoluta del riesgo] ...

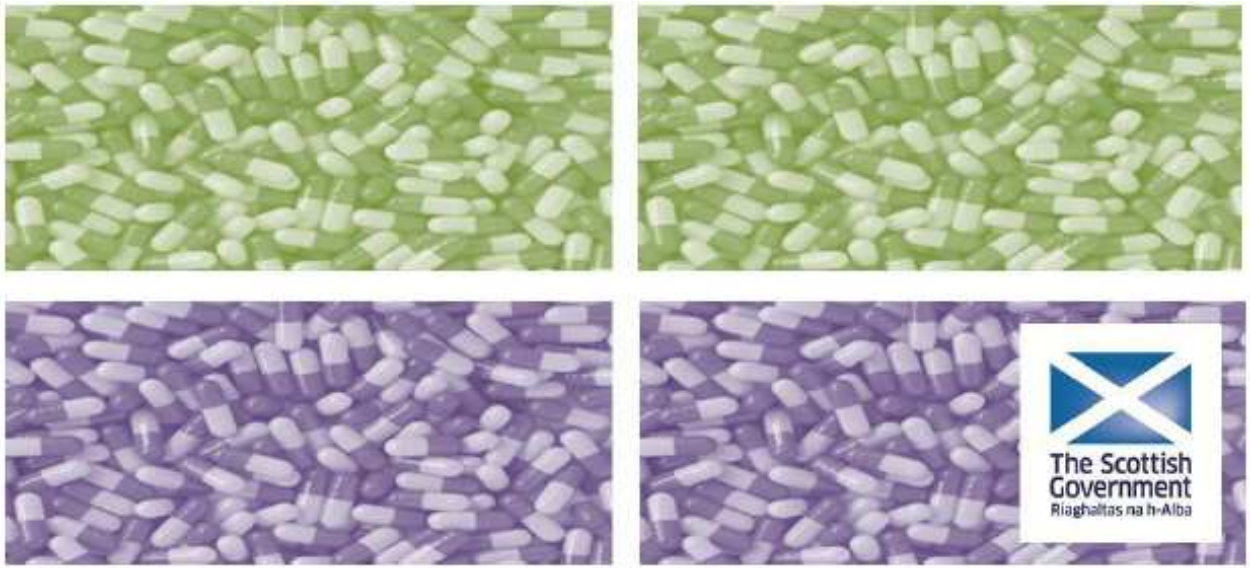
Medicine or intervention	Comparator	Study population	Outcome	Duration of trial	Number needed to treat (NNT)	Annualised number NNT
1 BP control (<140/90mmHg)	No treatment	Patients with hypertension and age > 80yrs	Total mortality	2 years	333	666
			Cardiovascular mortality and morbidity	2 years	35	70
18 Aspirin	Placebo or no treatment	Primary prevention of CVD	Serious vascular event (Defined as MI, stroke or vascular death)	5.8 years (mean follow-up)	246	1428
24 Statin (Simvastatin 40mg daily,	Placebo	Secondary prevention of CVD	Ischaemic or haemorrhagic stroke	48 months	100	400-420
27 Alendronate 10mg tablets	Placebo		Vertebral secondary prevention	60 months (5 years)	80-84: 12; 85-89: 11	80-84: 60; 85-89: 55
			Hip secondary prevention		80-84: 21; 85-89: 9	80-84: 105; 85-89: 45

OPTIMIZACIÓN GENERAL DE LA PRESCRIPCIÓN



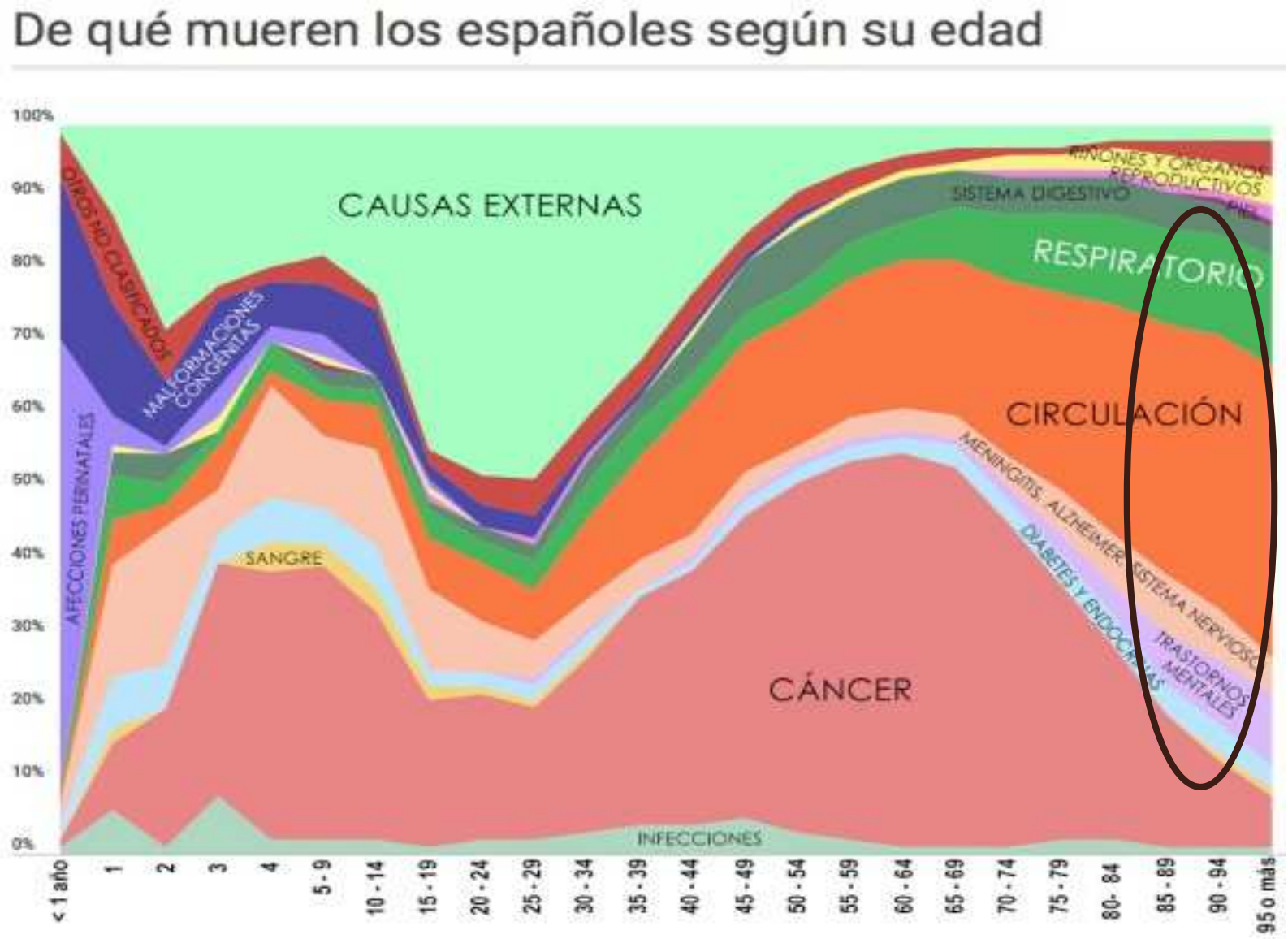
Polypharmacy Guidance

March 2015



ESTRATEGIAS DE OPTIMIZACIÓN EN SITUACIONES CLÍNICAS CONCRETAS

Causas mortalidad



ESTRATEGIAS DE OPTIMIZACIÓN EN SITUACIONES CLÍNICAS CONCRETAS: SISTEMA NEUROLÓGICO

DEMENCIA

Tabla 2. Tratamiento específico. Cuándo iniciarlo.

Tipo de demencia	Indicación de tratamiento	Grado de evidencia
Deterioro cognitivo leve	No indicado	A
EA incipiente a leve (GDS 3-4)	IACE	A
EA moderada (GDS 5)	IACE Memantina IACE + memantina	A A B
EA moderadamente grave (GDS 6)	IACE Memantina IACE + memantina	B A B
EA grave (GDS 7)	No indicado iniciar tratamiento específico	D
DV de leve a moderada	IACE	A
DV moderada a grave	Memantina	A
DLB	IACE (rivastigmina) IACE (donepezilo/galantamina)	B C
Demencia-Parkinson	IACE (rivastigmina/donepezilo)	B
DLFT	No indicado IACE ni memantina	B

EA: enfermedad de Alzheimer; DV: demencia vascular; DLB: demencia por cuerpos de Lewy; DLFT: degeneración lobular frontotemporal.

ESTRATEGIAS DE OPTIMIZACIÓN EN SITUACIONES CLÍNICAS CONCRETAS: SISTEMA NEUROLÓGICO

Integrating Palliative Medicine into the Care of Persons with Advanced Dementia: Identifying Appropriate Medication Use

J Am Geriatr Soc 56:1306–1311, 2008.

Always appropriate

Antidiarrheals	Antiepileptic drugs	Expectorants
Laxatives	Anxiolytics	Lubricating eye drops
Antiemetics	Narcotic analgesics	Pressure ulcer products
Inhaled bronchodilators	Nonnarcotic analgesics	Lidoderm

Sometimes appropriate

Proton pump inhibitors	Antidepressants	Insulin
Histamine-2 receptor blockers	Tricyclic antidepressants	Antihistamines
Beta-blockers	Antibacterials	Decongestants
Calcium channel blockers	Antivirals	Electrolytes
Diuretics	Antiparasitic agents	Nutritional supplements
Angiotensin-converting enzyme inhibitors and angiotensin receptor blockers	Antifungal creams	Antiglaucoma drops
Nitroglycerin	Oral hypoglycemics	Antiinflammatory eye drops
Mucolytics	Thyroid hormones	Capsaicin
Inhaled corticosteroids	Antithyroid medications	Allopurinol
Antipsychotics	Corticosteroids	Colchicine

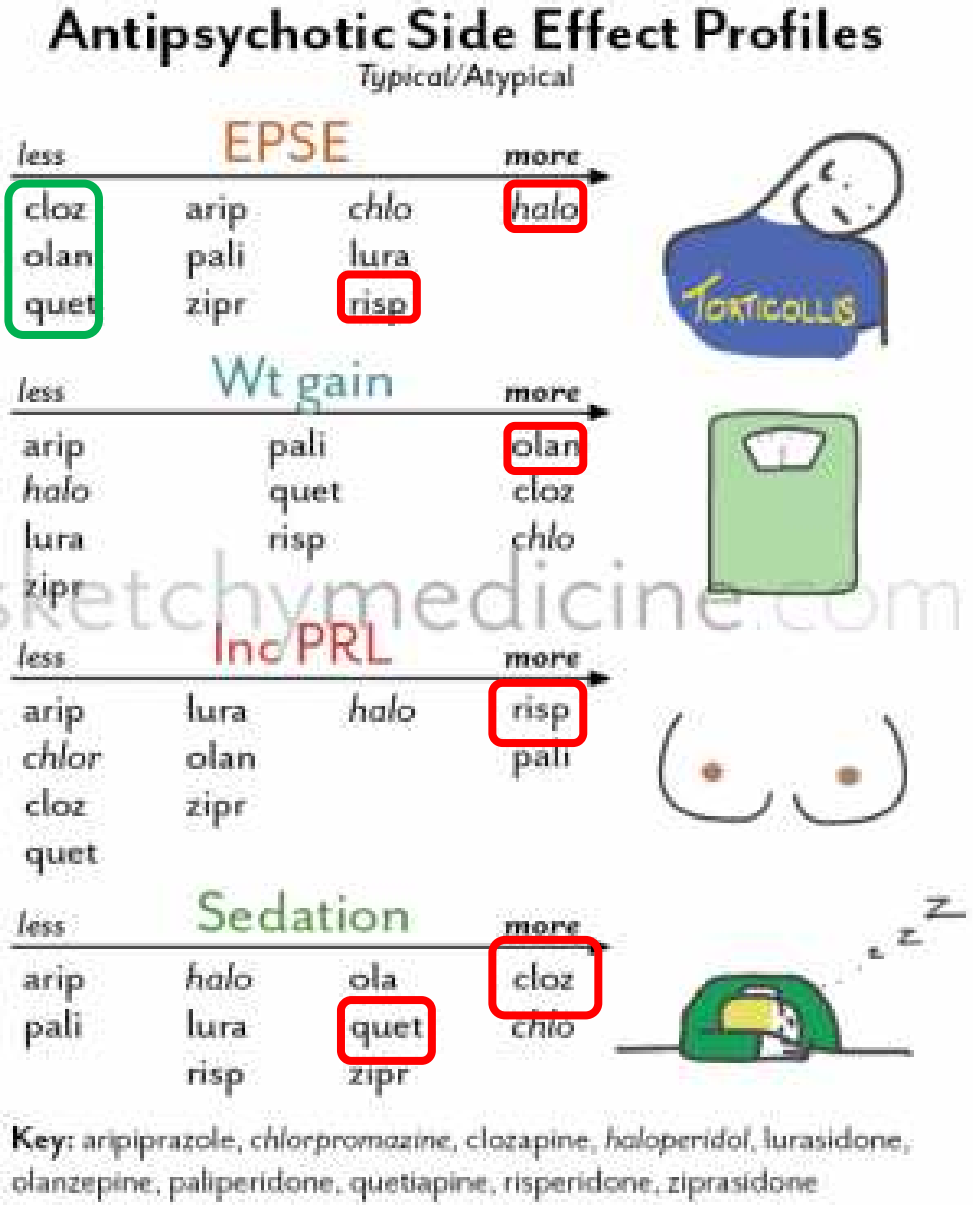
Rarely appropriate

Alpha blockers	Antiandrogens
Digoxin	Bisphosphonates
Clonidine	Mineralocorticoids
Antiarrhythmics	Heparin and low molecular-weight heparins
Hydralazine	Warfarin
Appetite stimulants	Tamsulosin
Bladder relaxants	Antispasmodics

Never appropriate

Lipid-lowering medications	
Antiplatelet agents, excluding aspirin	
Leukotriene receptor antagonists	
Acetylcholinesterase inhibitors	
N-methyl-D-aspartate receptor antagonists (memantine)	Cytotoxic chemotherapy
Antiestrogens	Hormone antagonists
Sex hormones	Immunomodulators

Tratamiento con NEUROLÉPTICOS en los trastornos de conducta asociados a la demencia: PERFIL DE SEGURIDAD



Aripiprazole	1,18 (0,58-2,55)
Olanzapina	**2,33 (1,08-5,61)**
Quetiapina	1,08 (0,53-2,30)
Risperidona	**2,08 (1,38-3,22)**

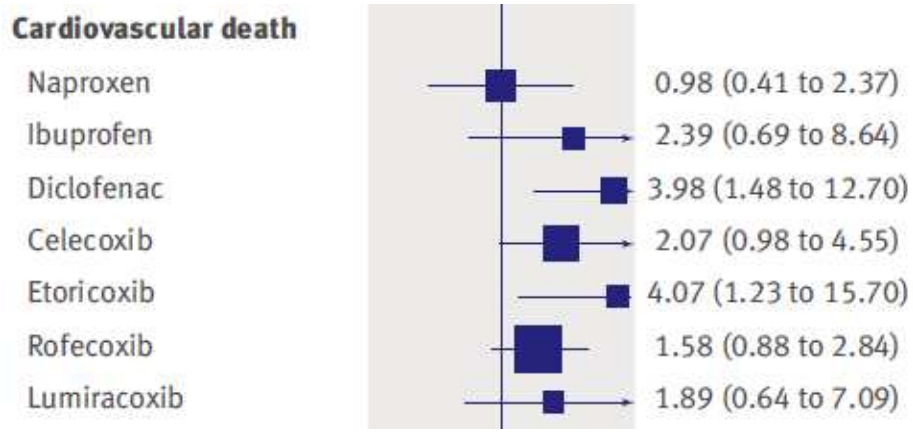
DOLOR

PARACETAMOL: analgésico de 1ª elección (seguridad y eficacia).

AINES:

TOXICIDAD dosis-dependiente ➔ USAR dosis mínima eficaz (ibuprofeno 400 mg/8h vs 600 mg c/8h)

PRECAUCIÓN si IRC y/o HTA y/o ICC y RIESGO CARDIOVASCULAR



TOXICIDAD GASTROINTESTINAL:

Dexketoprofeno > Naproxeno > Ibuprofeno/diclofenaco > Coxib

OPIACEOS:

Uso PROFILACTICO de LAXANTES/ANTIEMETICOS

TRAMADOL/MEPERIDINA ➔ Sde Confusional / Sde Serotoninérgico

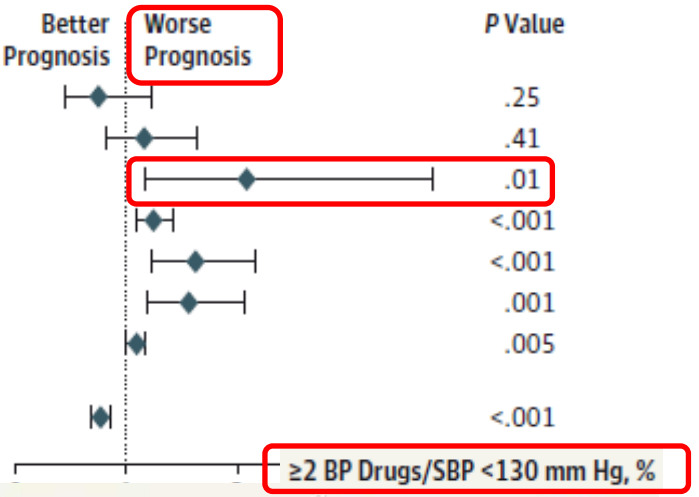
ESTRATEGIAS DE OPTIMIZACIÓN EN SITUACIONES CLÍNICAS CONCRETAS: SISTEMA CARDIOVASCULAR

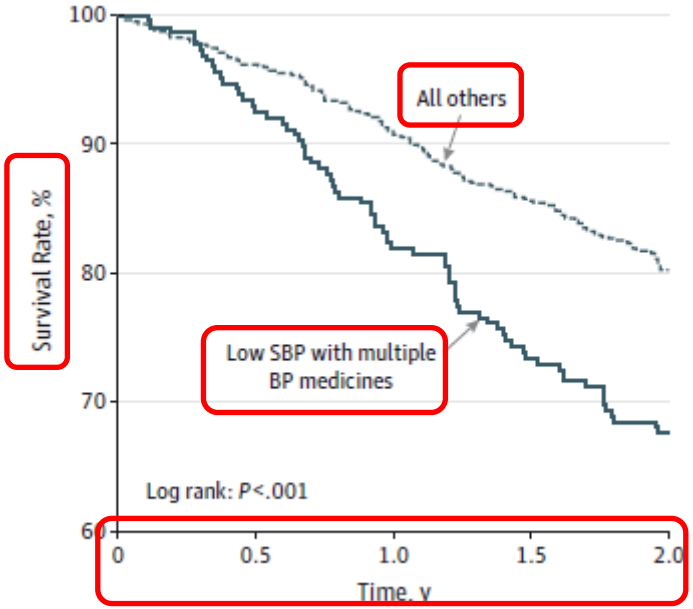
HIPERTENSIÓN ARTERIAL

Treatment With Multiple Blood Pressure Medications, Achieved Blood Pressure, and Mortality in Older Nursing Home Residents The PARTAGE Study

JAMA Intern Med. 2015;175(6):989-995.

Adjusted analysis	HR (95% CI)	P Value
SBP <130 mm Hg	0.75 (0.46-1.22)	.25
≥2 Anti-HTN drugs	1.16 (0.82-1.64)	.41
SBP <130 mm Hg and ≥2 anti-HTN drugs	2.09 (1.16-3.77)	.01
Age, per 5 y	1.25 (1.10-1.42)	<.001
Male sex	1.63 (1.22-2.17)	<.001
BMI ≤25	1.57 (1.19-2.06)	.001
Charlson Comorbidity Index score, per 1-point increase	1.09 (1.03-1.16)	.005
ADL score, per 1-point increase	0.77 (0.68-0.86)	<.001



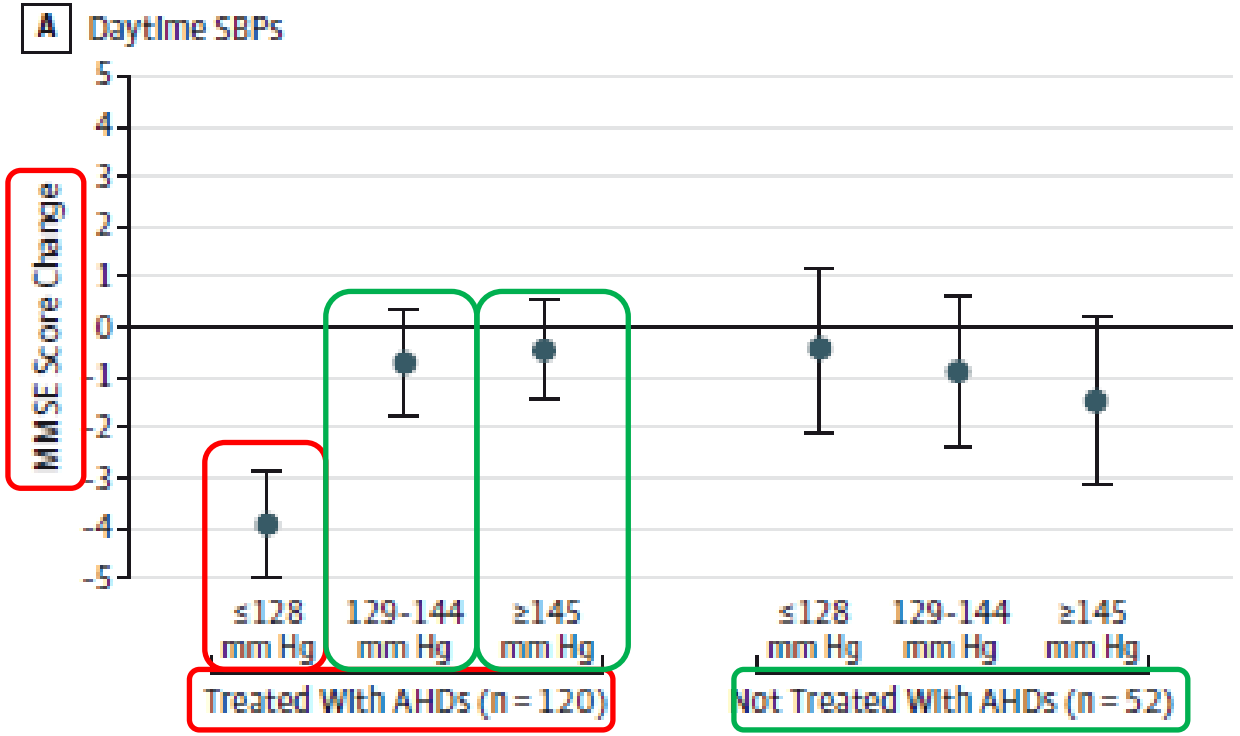


Characteristic	Yes/Yes	All Others[a]
Patients, No. (%)	227 (20.1)	900 (79.9)
Stroke	4.4[b]	1.4
Heart failure	5.7[c]	3.0
CHD and sudden death	2.2	3.2
Other CV	2.2	1.8
All CV deaths	14.5[c]	9.4
Cancer	4.4[c]	1.8
Infection	3.1	2.3
Fracture	1.3	0.4
Other non-CV deaths	8.8[c]	5.7
All non-CV deaths	17.6[d]	10.2
Total mortality	32.2[d]	19.7

Effects of Low Blood Pressure in Cognitively Impaired Elderly Patients Treated With Antihypertensive Drugs

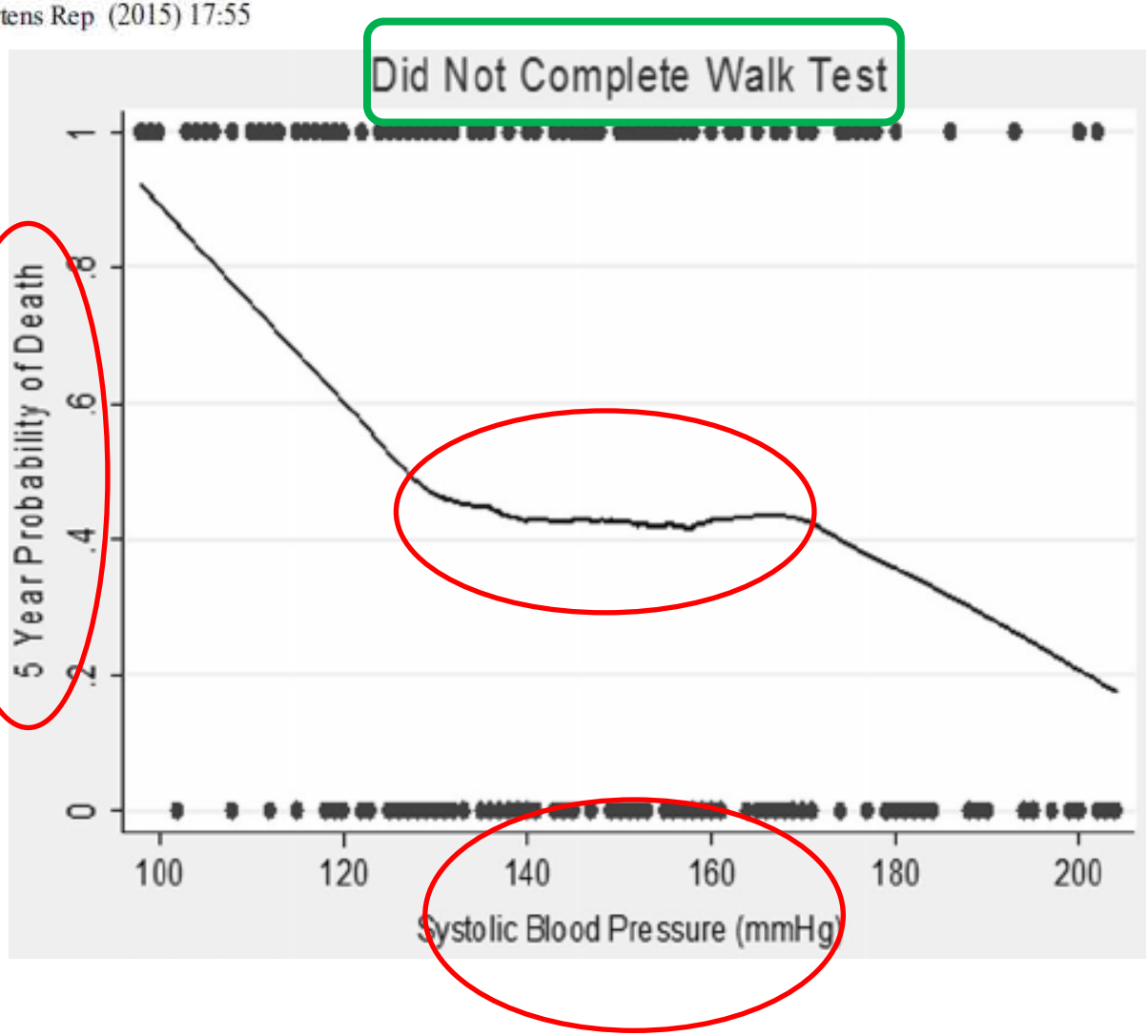
JAMA Intern Med. 2015;175(4):578-585.

Figure 3. Multivariable Analysis of MMSE Score Change by AHD Treatment and Daytime and Office SBPs



Blood Pressure in Older Adults: the Importance of Frailty

Curr Hypertens Rep (2015) 17:55



ESTRATEGIAS DE OPTIMIZACIÓN EN SITUACIONES CLÍNICAS CONCRETAS: SISTEMA CARDIOVASCULAR

Original Investigation

Intensive vs Standard Blood Pressure Control and Cardiovascular Disease Outcomes in Adults Aged ≥75 Years

A Randomized Clinical Trial

June 28, 2016, Vol 315, No. 24 >

OBJECTIVE To evaluate the effects of intensive (<120 mm Hg) compared with standard (<140 mm Hg) SBP targets in persons aged 75 years or older with hypertension but without diabetes.

MAIN OUTCOMES AND MEASURES The primary cardiovascular disease outcome was a composite of nonfatal myocardial infarction, acute coronary syndrome not resulting in a myocardial infarction, nonfatal stroke, nonfatal acute decompensated heart failure, and death from cardiovascular causes. All-cause mortality was a secondary outcome.

CONCLUSIONS AND RELEVANCE Among ambulatory adults aged 75 years or older, treating to an SBP target of less than 120 mm Hg compared with an SBP target of less than 140 mm Hg resulted in significantly lower rates of fatal and nonfatal major cardiovascular events and death from any cause.

ESTRATEGIAS DE OPTIMIZACIÓN EN SITUACIONES CLÍNICAS CONCRETAS: SISTEMA CARDIOVASCULAR

Original Investigation

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A Randomized Clinical Trial

JAMA. doi:10.1001/jama.2016.7050

Table 4. Incidence of Cardiovascular and Mortality Outcomes by Frailty Status and Gait Speed

		Intensive Treatment		Standard Treatment				
		No./Total With Outcome Events	% (95% CI) With Outcome Events/y	No./Total With Outcome Events	% (95% CI) With Outcome Events/y	HR (95% CI)[a]	*P* Value	*P* Value for Interaction
Frailty status[b]								
Primary outcome[c]	Fit	4/159	0.80 (0.30-2.12)	10/190	1.72 (0.93-3.20)	0.47 (0.13-1.39)[d]	.20	
	Less fit	48/711	2.23 (1.68-2.97)	77/745	3.51 (2.81-4.39)	0.63 (0.43-0.91)	.01	.84
	Frail	50/440	3.90 (2.96-5.15)	61/375	5.80 (4.52-7.46)	0.68 (0.45-1.01)	.06	
All-cause mortality	Fit	5/159	0.98 (0.41-2.36)	6/190	1.01 (0.45-2.24)	0.95 (0.27-3.15)[d]	.93	
	Less fit	26/711	1.16 (0.79-1.71)	52/745	2.24 (1.71-2.95)	0.48 (0.29-0.78)	.003	.52
	Frail	40/440	2.95 (2.17-4.03)	49/375	4.28 (3.24-5.67)	0.64 (0.41-1.01)	.05	
Primary outcome plus all-cause mortality[c]	Fit	8/159	1.59 (0.80-3.19)	13/190	2.24 (1.30-3.86)	0.71 (0.28-1.69)[d]	.45	
	Less fit	65/711	3.01 (2.36-3.84)	108/745	4.90 (4.05-5.91)	0.60 (0.44-0.83)	.002	.88
	Frail	69/440	5.37 (4.24-6.80)	84/375	7.95 (6.42-9.85)	0.67 (0.48-0.95)	.02	
Gait speed								
Primary outcome[c]	Speed ≥0.8 m/s	59/880	2.22 (1.72-2.87)	86/893	3.24 (2.63-4.01)	0.67 (0.47-0.94)	.02	
	Speed <0.8 m/s	34/371	3.15 (2.25-4.41)	54/369	5.22 (4.00-6.81)	0.63 (0.40-0.99)	.05	.85
	Missing	9/66	4.40 (2.29-8.46)	8/57	5.13 (2.57-10.27)	0.86 (0.33-2.29)[d]	.75	
All-cause mortality	Speed ≥0.8 m/s	40/880	1.45 (1.07-1.98)	60/893	2.16 (1.67-2.78)	0.65 (0.43-0.98)	.04	
	Speed <0.8 m/s	29/371	2.56 (1.78-3.68)	40/369	3.57 (2.62-4.86)	0.75 (0.44-1.26)	.28	.68
	Missing	4/66	1.85 (0.69-4.93)	7/57	4.19 (2.00-8.80)	0.44 (0.12-1.47)[d]	.20	
Primary outcome plus all-cause mortality[c]	Speed ≥0.8 m/s	82/880	3.08 (2.48-3.83)	119/893	4.48 (3.74-5.36)	0.67 (0.50-0.89)	.006	
	Speed <0.8 m/s	51/371	4.70 (3.57-6.18)	73/369	7.00 (5.56-8.80)	0.69 (0.46-1.01)	.06	.91
	Missing	11/66	5.37 (2.97-9.70)	13/57	8.30 (4.82-14.30)	0.64 (0.28-1.44)[d]	.28	

ESTRATEGIAS DE OPTIMIZACIÓN EN SITUACIONES CLÍNICAS CONCRETAS: SISTEMA CARDIOVASCULAR

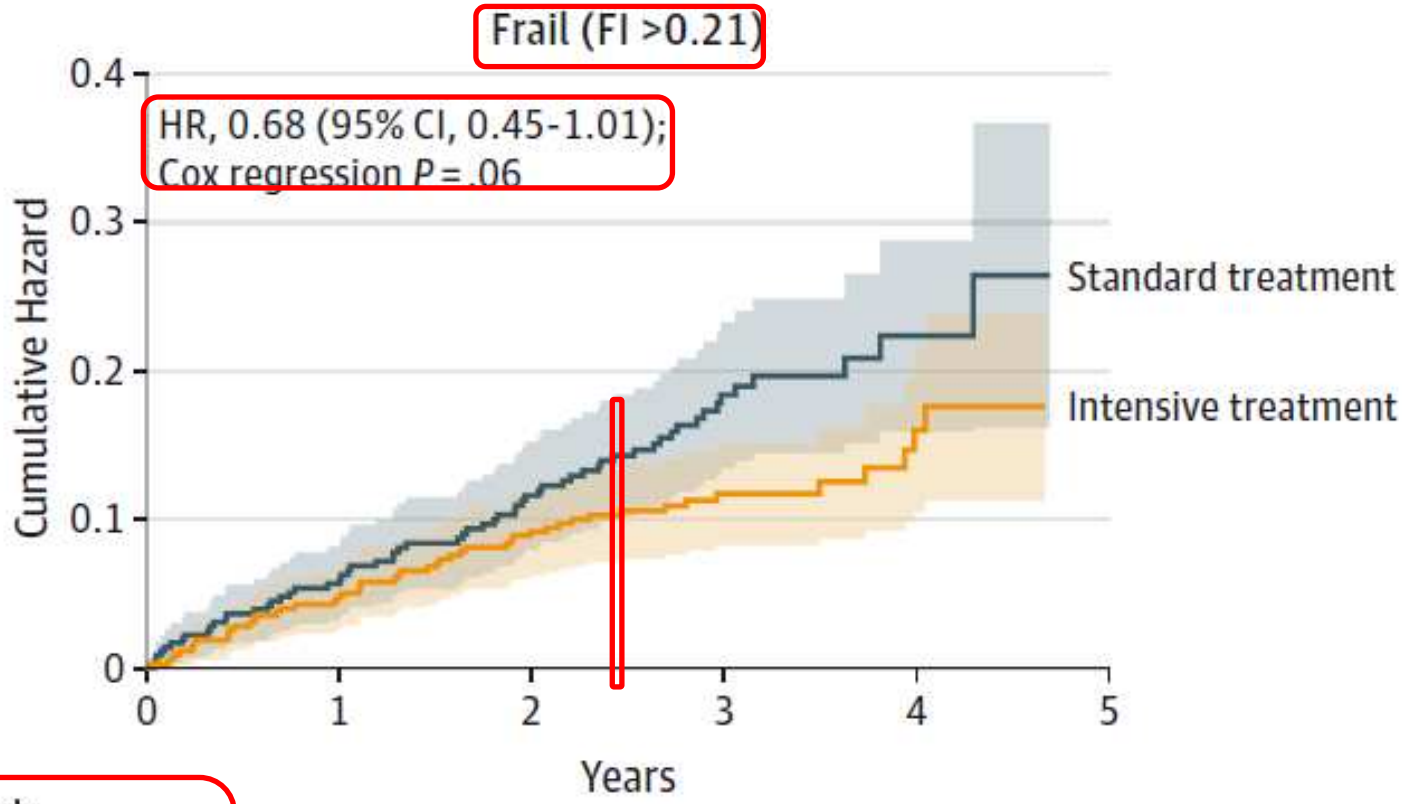
Original Investigation

Intensive vs Standard Blood Pressure Control and Cardiovascular Disease Outcomes in Adults Aged ≥75 Years

A Randomized Clinical Trial

JAMA. doi:10.1001/jama.2016.7050

Figure 2. Kaplan-Meier Curves for the Primary Cardiovascular Disease Outcome in Systolic Blood Pressure Intervention Trial (SPRINT) in Participants Aged 75 Years or Older by Baseline Frailty Status



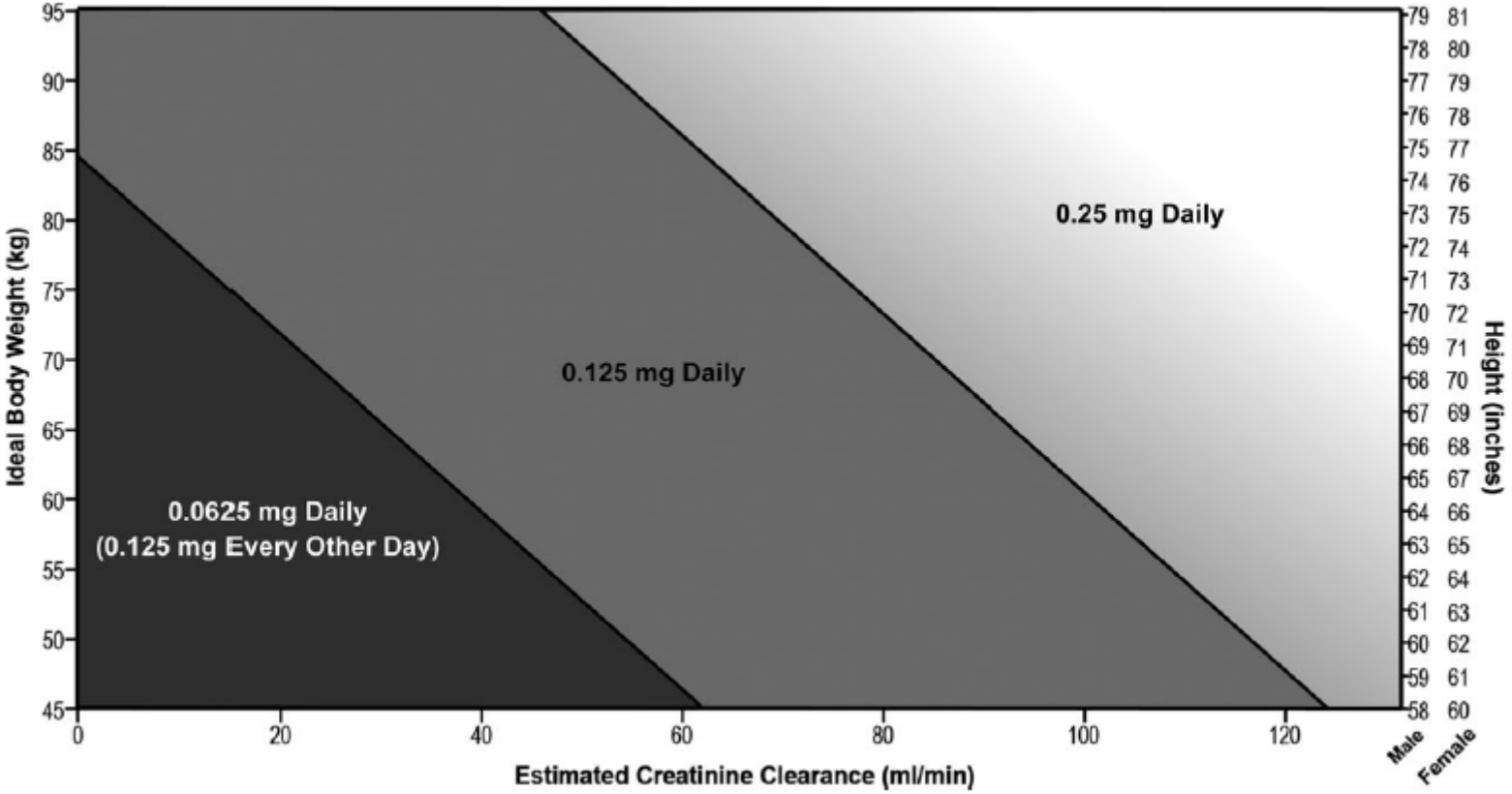
No. at risk					
Type of treatment					
Standard	375	338	305	177	49
Intensive	440	398	371	223	71

TABLE 3. Comparisons of guideline goal BPs and initial drug therapy

	JNC 7[1] 2003	JNC 8[2] 2013	NICE[4] 2011	CHEP[5] 2013	ESH/ESC[6] 2013	ASH/ISH[7] 2013
Goal BP (mm Hg)						
age <60 years	<140/90 for all ages without diabetes or CKD	<140/90			<140/90[a]	
age ≥60 years		<150/90				
age <80 years			<140/90	<140/90	<150/90[b]	<140/90
age ≥80 years			<150/90	<150/90	<150/90	<150/90[c]
Diabetes	<130/80	<140/90	<130-140/80[d]	<130/80	<140/85	<140/90
CKD	<130/80	<140/90	<130-140/80-90[e]	<140/90	<130-140/90[f]	<140/90
Initial drug preferences						
General (nonblack) population	Thiazide diuretic, ACE inhibitor, ARB, calcium channel blocker, beta-blocker	Thiazide diuretic, ACE inhibitor, ARB, calcium channel blocker	• age <55 years: ACE inhibitor or ARB • age ≥55 years: calcium channel blocker	Thiazide diuretic, ACE inhibitor, ARB, beta-blocker (if age <60 years)	Thiazide diuretic, ACE inhibitor, ARB, calcium channel blocker, beta-blocker[g]	Thiazide diuretic, ACE inhibitor, ARB, calcium channel blocker
Black	No preferences for any subpopulation	Thiazide diuretic, calcium channel blocker	Calcium channel blocker[h]			Thiazide diuretic, calcium channel blocker
Diabetes		Thiazide diuretic, ACE inhibitor, ARB, calcium channel blocker	ACE inhibitor, ARB	Thiazide diuretic, ACE inhibitor, ARB, calcium channel blocker[i]	Thiazide diuretic, ACE inhibitor, ARB, calcium channel blocker, beta-blocker[i]	Thiazide diuretic, ACE inhibitor, ARB, calcium channel blocker
CKD		ACE inhibitor, ARB	ACE inhibitor, ARB	ACE inhibitor, ARB	ACE inhibitor, ARB	ACE inhibitor, ARB

RECOMENDACIONES PARA EL USO DE DIGOXINA EN PACIENTES CON ACxFA

- **NO USAR como control de frecuencia de 1ª opción**
- **USAR como 1ª opción beta-bloqueantes o antagonistas del calcio**
- **USAR dosis conservadoras, valorar la función renal, K+ (IECA, ARA-II, MRA) y monitorizar sus concentraciones y potenciales efectos 2º.**



ESTRATEGIAS DE OPTIMIZACIÓN EN SITUACIONES CLÍNICAS CONCRETAS: SISTEMA RESPIRATORIO

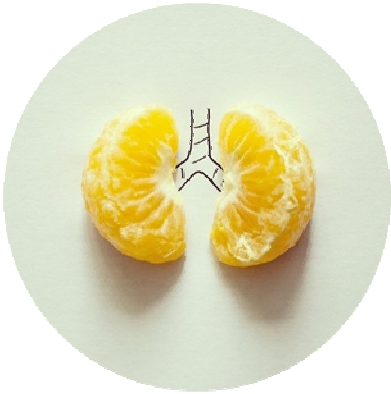
NEUMONÍA

Guidelines for the management of community-acquired pneumonia in the elderly patient

Rev Esp Quimioter 2014;27(1): 69-86

Empiric treatment in CAP in the elderly

	SCENARIO	TREATMENT
Patient without frailty	Outpatient treatment	Amoxicillin/clavulanate or cefditoren + clarithromycin or moxifloxacin or levofloxacin
	Treatment at admission	Amoxicillin/clavulanate or ceftriaxone + azithromycin or moxifloxacin or levofloxacin
Patient with frailty	Mild frailty*	Amoxicillin/clavulanate or ceftriaxone + azithromycin or moxifloxacin or levofloxacin
	Moderate-severe frailty	Ertapenem or amoxicillin/clavulanate**



ESTRATEGIAS DE OPTIMIZACIÓN EN SITUACIONES CLÍNICAS CONCRETAS: ENDOCRINOLOGÍA

DIABETES MELLITUS

SPECIAL ARTICLE

JAGS 60:2342–2356, 2012

Diabetes in Older Adults: A Consensus Report

Table 1. A Framework for Considering Treatment Goals for Glycemia, Blood Pressure, and Dyslipidemia in Older Adults with Diabetes

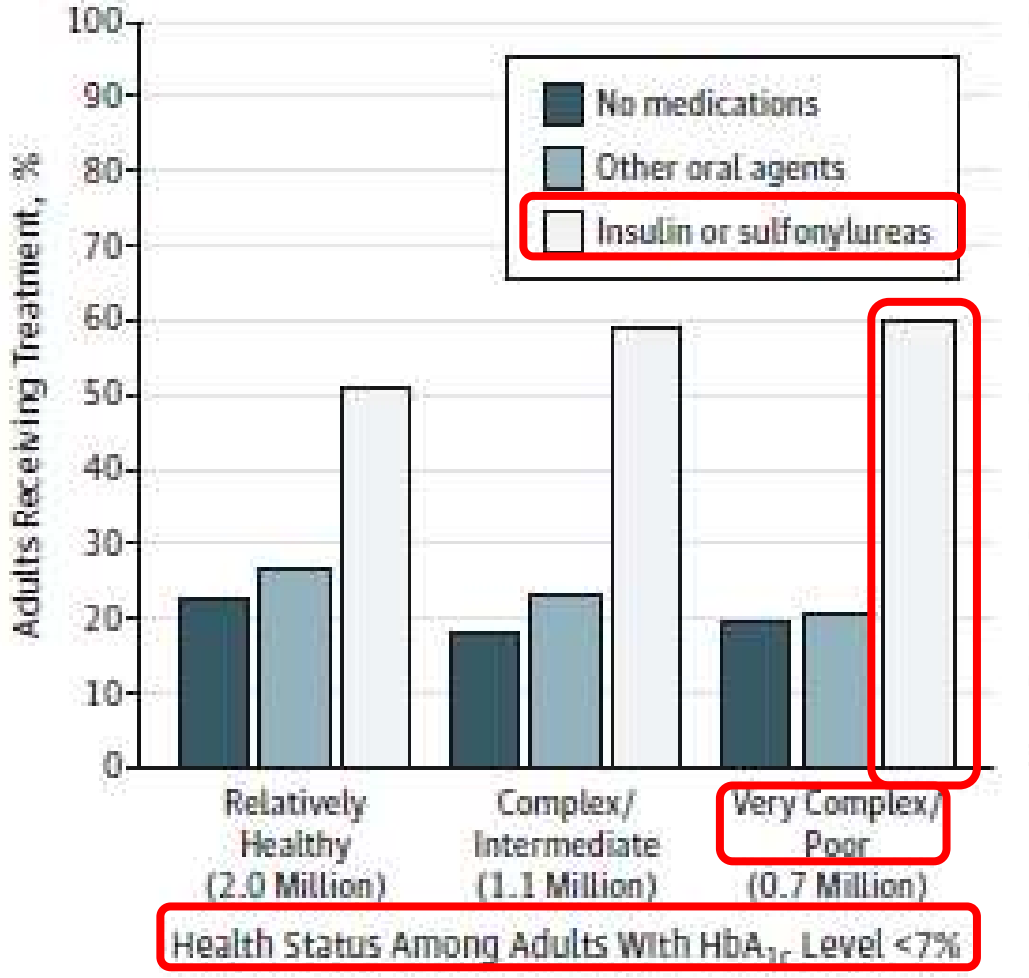
Patient Characteristics/ Health Status	Rationale	Reasonable A1C Goal (A Lower Goal May Be Set for an Individual if Achievable without Recurrent or Severe Hypoglycemia or Undue Treatment Burden)	Fasting or Preprandial Glucose (mg/dL)	Bedtime Glucose (mg/dL)	Blood Pressure (mmHg)	Lipids
Healthy (Few coexisting chronic illnesses, intact cognitive and functional status)	Longer remaining life expectancy	<7.5%	90–130	90–150	<140/80	Statin unless contraindicated or not tolerated
Complex/intermediate (Multiple coexisting chronic illnesses[a] or 2+ instrumental ADL impairments or mild to moderate cognitive impairment)	Intermediate remaining life expectancy, high treatment burden, hypoglycemia vulnerability, fall risk	<8.0%	90–150	100–180	<140/80	Statin unless contraindicated or not tolerated
Very complex/poor health (Long-term care or end-stage chronic illnesses[b] or moderate to severe cognitive impairment or 2+ ADL dependencies)	Limited remaining life expectancy makes benefit uncertain	<8.5%[c]	100–180	110–200	<150/90	Consider likelihood of benefit with statin (secondary prevention more so than primary)

ESTRATEGIAS DE OPTIMIZACIÓN EN SITUACIONES CLÍNICAS CONCRETAS: ENDOCRINOLOGÍA

DIABETES MELLITUS

Potential Overtreatment of Diabetes Mellitus in Older Adults With Tight Glycemic Control

LESS IS MORE *JAMA Intern Med*. doi:10.1001/jamainternmed.2014.7345



ESTRATEGIAS DE OPTIMIZACIÓN EN SITUACIONES CLÍNICAS CONCRETAS: ENDOCRINOLOGÍA

Intensive Treatment and Severe Hypoglycemia Among Adults With Type 2 Diabetes

Rozalina G. McCoy, MD, MS; Kasia J. Lipska, MD, MHS; Xiaoxi Yao, PhD, MHS; Joseph S. Ross, MD, MHS; Victor M. Montori, MD, MS; Nilay D. Shah, PhD

JAMA Intern Med. doi:10.1001/jamainternmed.2016.2275
Published online June 6, 2016.

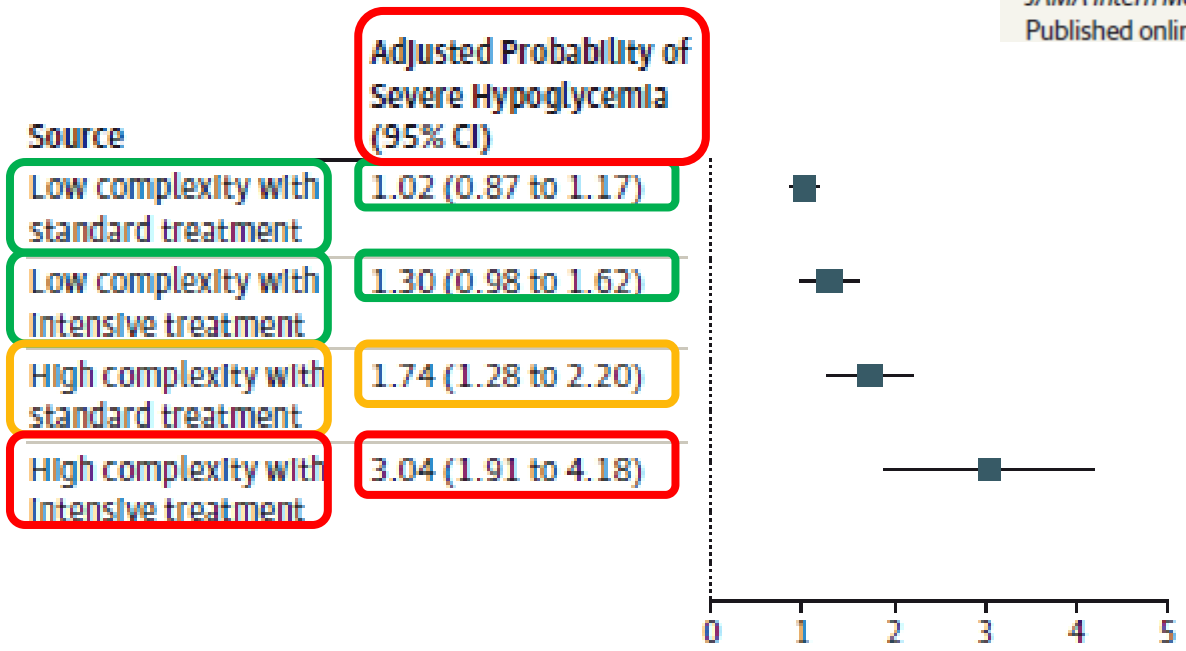


Figure 3. Risk Factors for Incident Severe Hypoglycemia During the 2 Years After the Index Hemoglobin A_{1c} (HbA_{1c}) Test

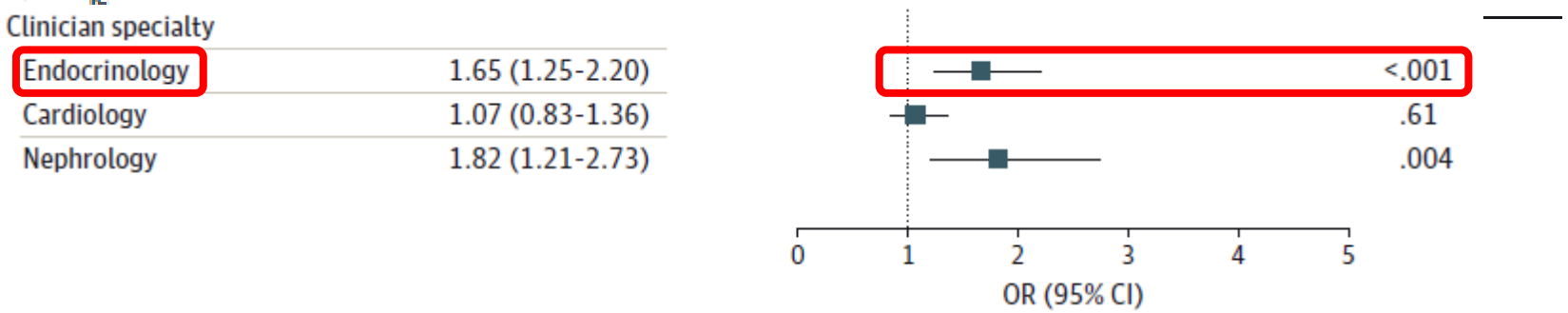


Table 3. Associations Between Glycosylated Hemoglobin (HbA1c), Blood Pressure, and Total Cholesterol and All-Cause Mortality (N = 25,966)

Factor	Deaths, n/N	%	Mortality (1,000 Person-Years)	Unadjusted Hazard Ratio (95% Confidence Interval) *P*-Value	Adjusted Hazard Ratio (95% Confidence Interval) *P*-Value
HbA1c, % (mmol/mol)					
<6.0 (<42)	301/1,387	21.7	134.9	1.21 (1.03–1.42) .02	1.04 (0.88–1.23) .67
6.0–6.4 (42–47)	506/2,976	17.0	102.1	0.92 (0.80–1.05) .21	0.91 (0.79–1.05) .19
6.5–6.9 (48–52)	1,081/7,463	14.5	85.6	0.77 (0.68–0.87) <.001	0.84 (0.74–0.96) .009
7.0–7.4 (53–57)	648/4,700	13.8	80.9	0.72 (0.63–0.83) <.001	0.80 (0.70–0.91) .001
7.5–7.9 (58–63)	453/2,777	16.3	98.6	0.88 (0.77–1.02) .09	0.90 (0.79–1.04) .15
8.0–8.4 (64–68)	324/1,780	18.2	111.5	Reference	Reference
≥8.5 (≥69)	641/3,006	21.3	133.1	1.20 (1.05–1.37) .009	1.04 (0.91–1.19) .55
Missing	536/1,877	28.6	195.9	1.76 (1.53–2.02) <.001	1.01 (0.86–1.19) .88
Blood pressure, mmHg					
<130/70	982/4,116	23.9	151.7	1.89 (1.67–2.13) <.001	1.52 (1.34–1.72) <.001
≥130/70 & <135/75	815/4,416	18.5	112.3	1.40 (1.23–1.58) <.001	1.30 (1.14–1.48) <.001
≥135/75 & <140/80	719/4,749	15.1	90.3	1.12 (0.99–1.27) .08	1.11 (0.97–1.27) .13
≥140/80 & <145/85	685/4,746	14.4	85.6	1.06 (0.93–1.21) .35	1.09 (0.95–1.24) .23
≥145/85 & <150/90	349/2,534	13.8	80.5	Reference	Reference
≥150/90 & <155/95	231/1,717	13.5	80.3	1.00 (0.85–1.18) .98	0.97 (0.82–1.14) .70
≥155/95	419/2,663	15.7	94.0	1.17 (1.01–1.35) .03	1.05 (0.91–1.22) .49
Missing	290/1,025	28.3	191.2	2.38 (2.04–2.78) <.001	1.38 (1.18–1.61) <.001
Total cholesterol, mmol/L					
<3.0	455/2,033	22.4	138.7	1.58 (1.39–1.80) <.001	1.42 (1.24–1.64) <.001
3.0–3.4	630/3,857	16.3	97.6	1.11 (0.99–1.25) .08	1.15 (1.02–1.29) .02
3.5–3.9	787/5,247	15.0	89.2	1.02 (0.91–1.14) .78	1.08 (0.96–1.21) .20
4.0–4.4	728/4,666	15.6	92.9	1.06 (0.94–1.19) .33	1.16 (1.03–1.30) .01
4.5–4.9	468/3,158	14.8	87.7	Reference	Reference
5.0–5.4	276/1,822	15.1	90.6	1.03 (0.89–1.20) .67	1.00 (0.85–1.16) .96
≥5.5	347/2,288	15.2	91.4	1.04 (0.91–1.20) .56	0.99 (0.86–1.13) .85
Missing	799/2,895	27.6	185.9	2.12 (1.89–2.38) <.001	1.40 (1.22–1.60) <.001

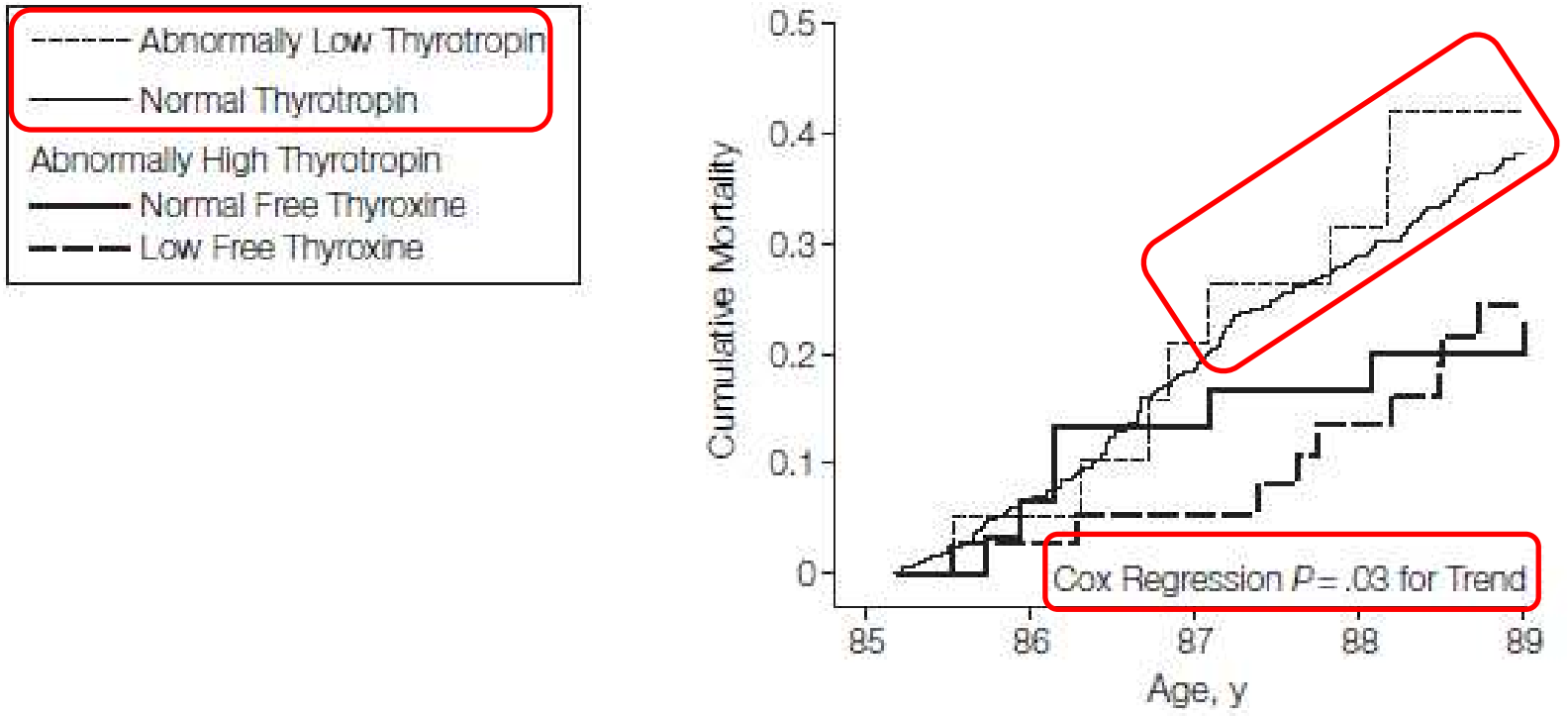
Table 4. Mortality Risk According to Combinations of Glycosylated Hemoglobin (HbA1c), Blood Pressure, and Total Cholesterol Risk Categories (N = 22,248)

Number of High Risk Categories	HbA1c, %	Blood Pressure, mmHg	Total Cholesterol, mmol/L	Deaths, n/N	%	Mortality (1,000 Person-Years)	Adjusted Hazard Ratio (95% Confidence Interval)	*P*-Value
0	–	–	–	830/6,940	12.0	69.3	Reference	
1	<6.0	–	–	59/429	13.8	82.1	0.98 (0.75–1.28)	.89
	≥8.0	–	–	302/1,884	16.0	96.6	1.28 (1.12–1.46)	<.001
	–	<135/75	–	631/3,478	18.1	109.5	1.37 (1.23–1.52)	<.001
	–	–	Men <3.0, Women <4.5	556/4,071	13.7	80.8	1.41 (1.25–1.58)	<.001
2	<6.0	<135/75	–	79/263	30.0	199.3	2.29 (1.79–2.92)	<.001
	<6.0	–	Men <3.0, Women <4.5	58/318	18.2	109.9	1.62 (1.23–2.13)	.001
	≥8.0	<135/75	–	212/856	24.8	159.6	1.77 (1.51–2.08)	<.001
	≥8.0	–	Men <3.0, Women <4.5	188/1,021	18.4	111.5	1.60 (1.35–1.89)	<.001
	–	<135/75	Men <3.0, Women <4.5	382/2,228	17.1	103.4	1.66 (1.45–1.90)	<.001
3	<6.0	<135/75	Men <3.0, Women <4.5	59/229	25.8	160.7	2.09 (1.59–2.75)	<.001
	≥8.0	<135/75	Men <3.0, Women <4.5	130/531	24.5	155.2	2.06 (1.68–2.53)	<.001

HIPOTIROIDISMO

Thyroid Status, Disability and Cognitive Function, and Survival in Old Age

JAMA. 2004;292:2591-2599



Abnormally Low Thyrotropin	19	18	15	13	11
Normal Thyrotropin	472	441	385	335	287
Abnormally High Thyrotropin					
Normal Free Thyroxine	30	28	26	25	23
Low Free Thyroxine	37	36	35	32	28

ESTRATEGIAS DE OPTIMIZACIÓN EN SITUACIONES CLÍNICAS CONCRETAS: ENDOCRINOLOGÍA

HIPOTIROIDISMO

Relationship Between Circulating Thyroid-Stimulating Hormone, Free Thyroxine, and Free Triiodothyronine Concentrations and 9-Year Mortality in Euthyroid Elderly Adults

Graziano Ceresini, MD, PhD, Michela Marina, MD,* Fulvio Lauretani, MD,† Marcello Maggio, MD, PhD,* Stefania Bandinelli, MD,‡ Gian P. Ceda, MD,* and*

J Am Geriatr Soc 64:553–560, 2016.

DESIGN: Longitudinal.

SETTING: Community-based.

PARTICIPANTS: Euthyroid Invecchiare in Chianti study participants aged 65 and older (N = 815).

MEASUREMENTS: Plasma TSH, FT3, and FT4 levels were predictors, and 9-year all-cause mortality was the outcome. Cox proportional hazards models adjusted for confounders were used to examine the relationship between TSH, FT3, and FT4 quartiles and all-cause mortality over 9 years of follow-up.

RESULTS: During follow-up (mean person-years 8,643.7, range 35.4–16,985.0), 181 deaths occurred (22.2%). Participants with TSH in the lowest quartile had higher mortality than the rest of the population. After adjusting for multiple confounders, participants with TSH in the lowest quartile (hazard ratio = 2.22, 95% confidence interval = 1.19–4.22) had significantly higher all-cause mortality than those with TSH in the highest quartile. Neither FT3 nor FT4 was associated with mortality.

CONCLUSION: In elderly euthyroid subjects, normal-low TSH is an independent risk factor for all-cause mortality.

SELECCIONA Y PRIORIZA LOS PACIENTES

IDENTIFICA LOS FACTORES DE RIESGO CONOCIDOS

ACTÚA EN LOS PROBLEMAS MÁS PREVALENTES

COMUNICACIÓN Y TRABAJO MULTI-DISCIPLINAR

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