ESTRATEGIAS DE OPTIMIZACIÓN FARMACOTERAPÉUTICA EN SITUACIONES CLÍNICAS CONTROVERTIDAS

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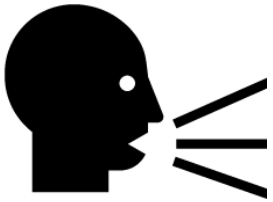
¿QUÉ VAMOS A VER?



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
4. Caso clínico

SITUANDO LA TERMINOLOGÍA

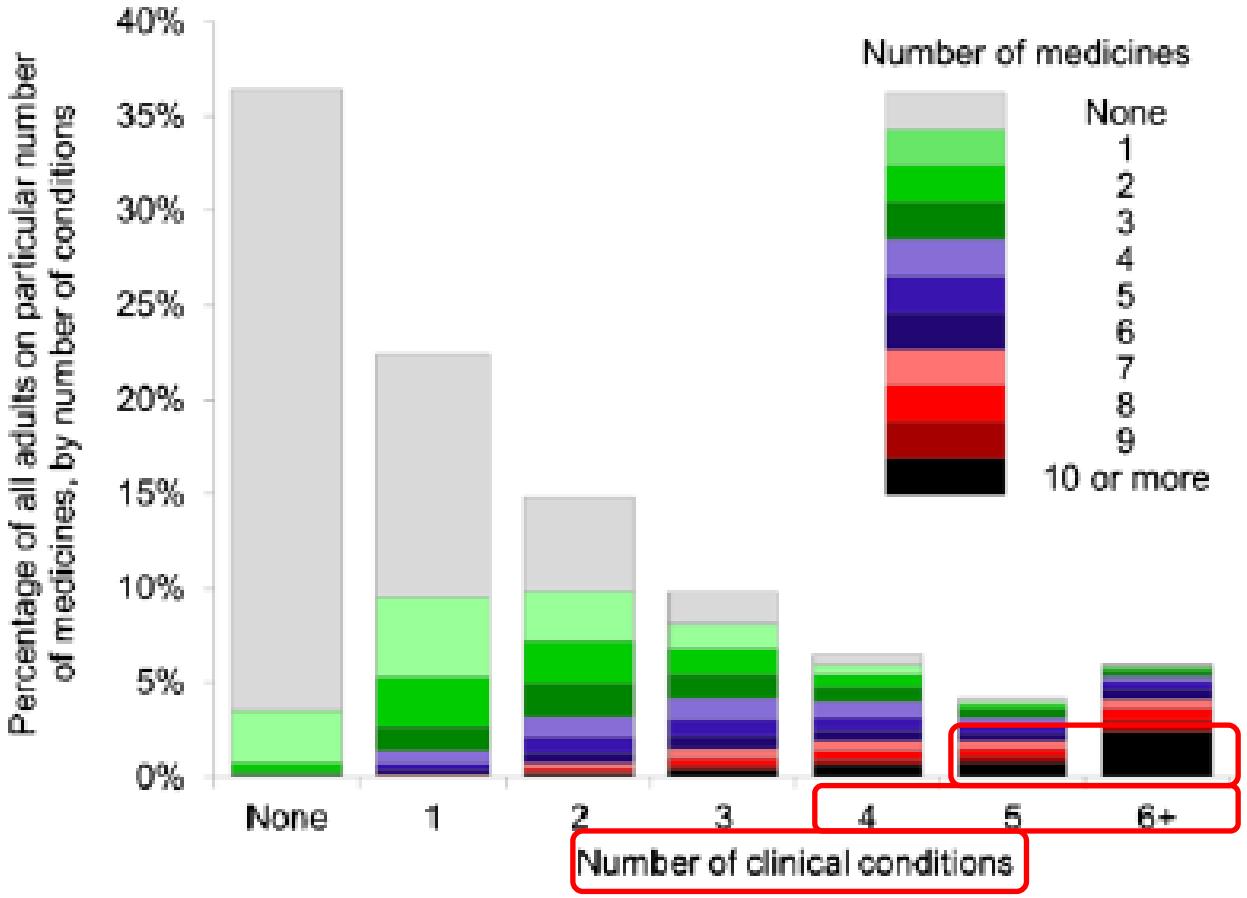
POLIFARMACIA

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

Polimedicación: epidemiología

Prevalence of polypharmacy in a Scottish primary care population

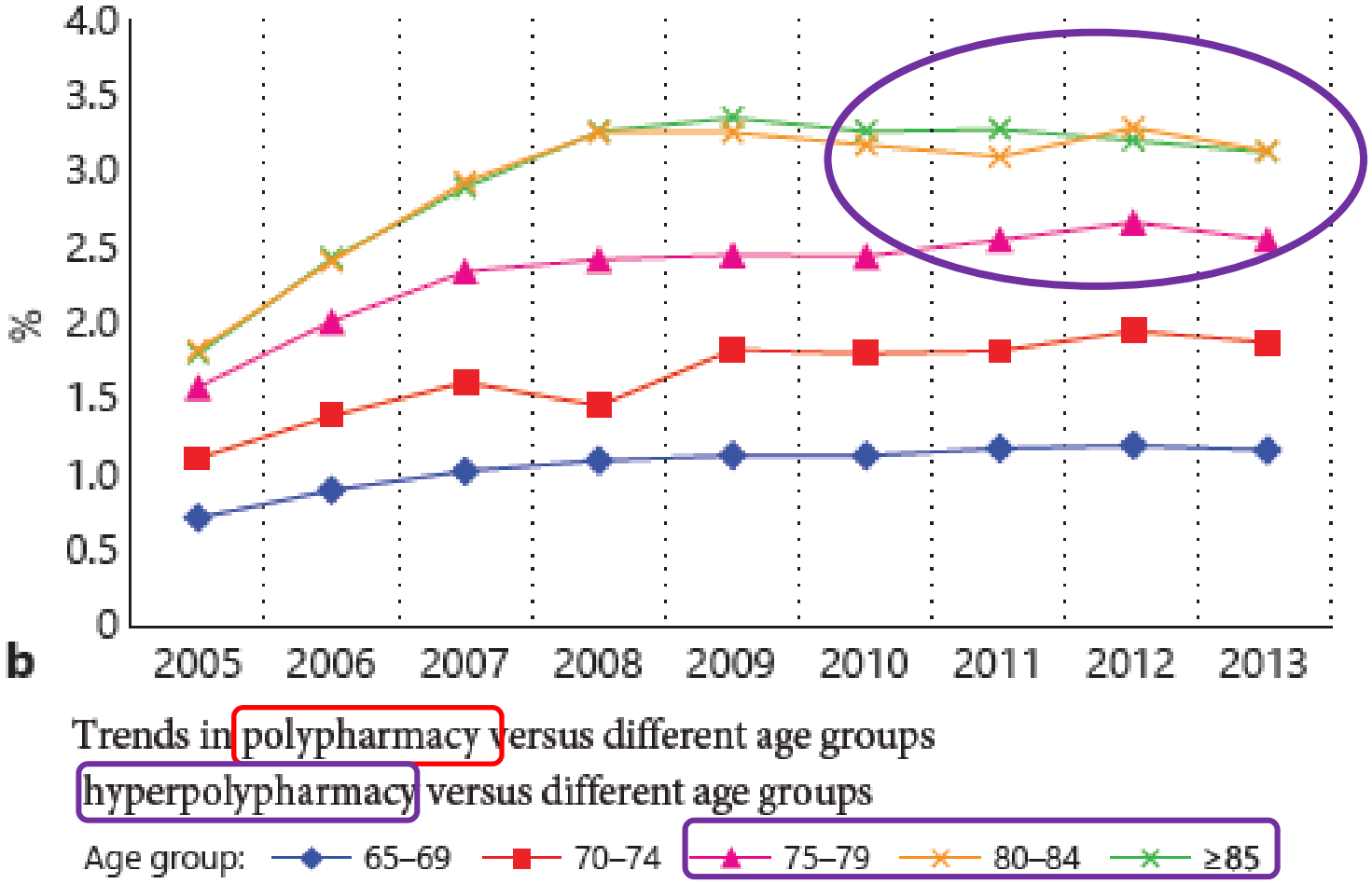
Eur J Clin Pharmacol (2014) 70:575–581



Polimedicación: epidemiología

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, 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

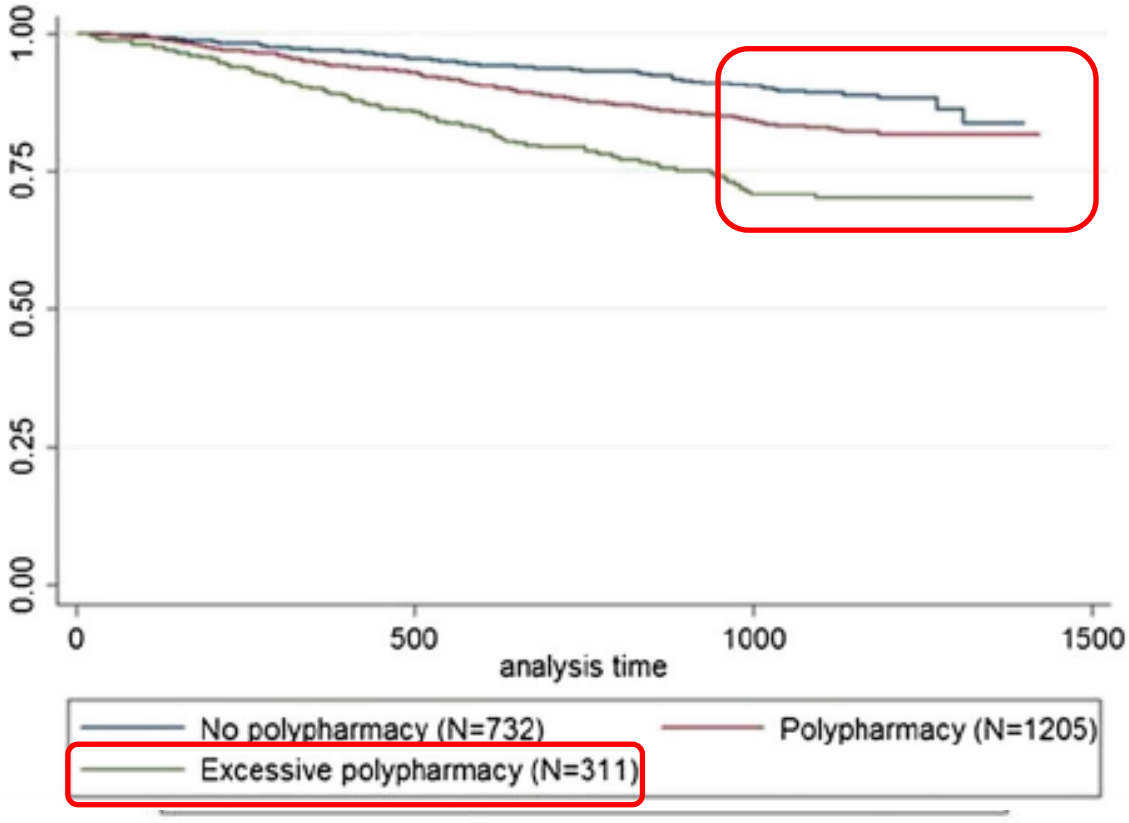


Figure 1. Kaplan–Meier survival estimates in participants of the SIPAF study according to the frailty status (A) and the level of polypharmacy (B)

Polimedicación, fragilidad y mortalidad

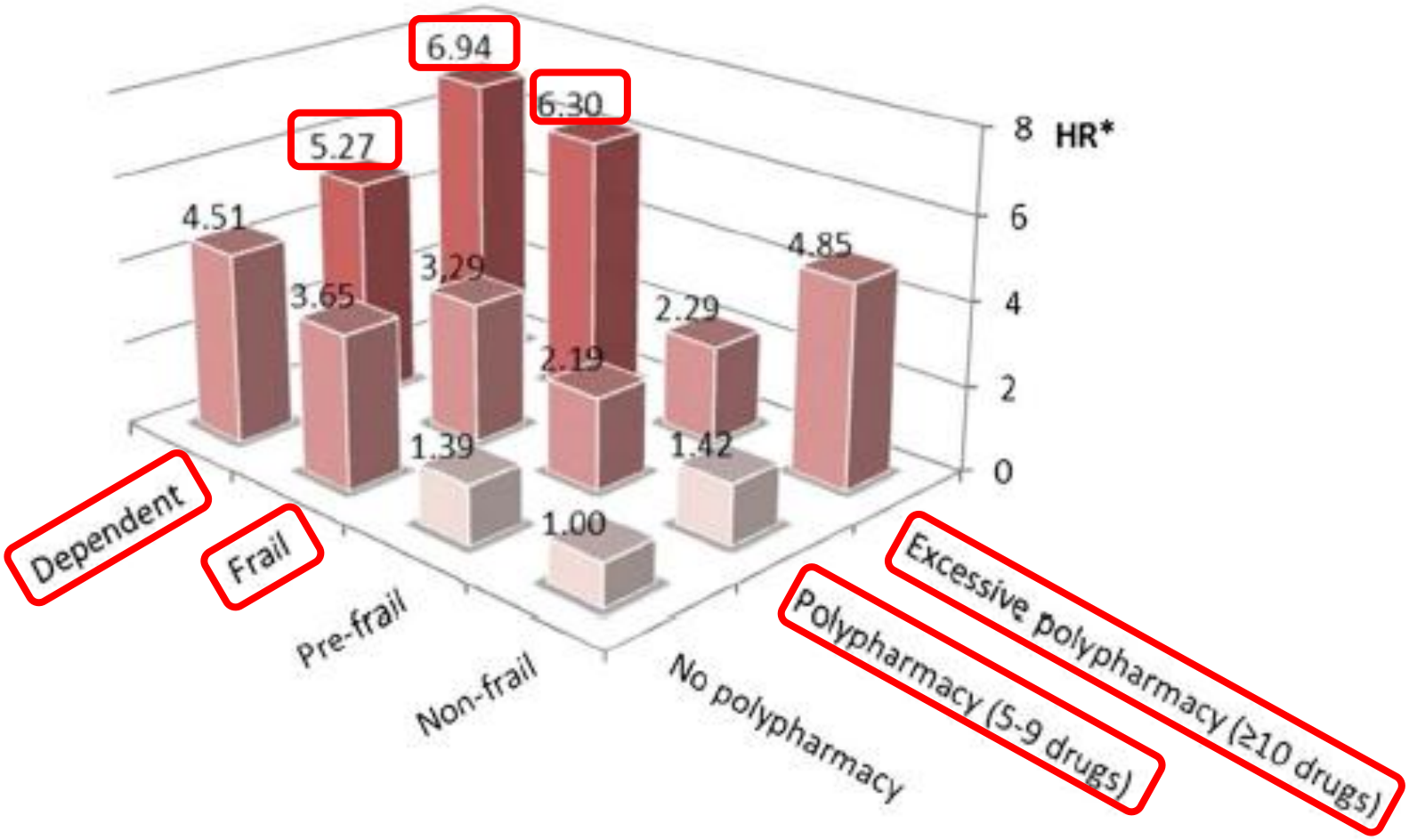


Figure 2. Mortality risk according to the combination of frailty and polypharmacy variables. *Hazard ratios (HR) adjusted for gender, age, comorbidity, cognitive impairment, and difficulty in IADL. *Legend*: Light colour: mortality risk not significantly different from 1; mild colour: significant increase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

Polimedicación, fragilidad 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

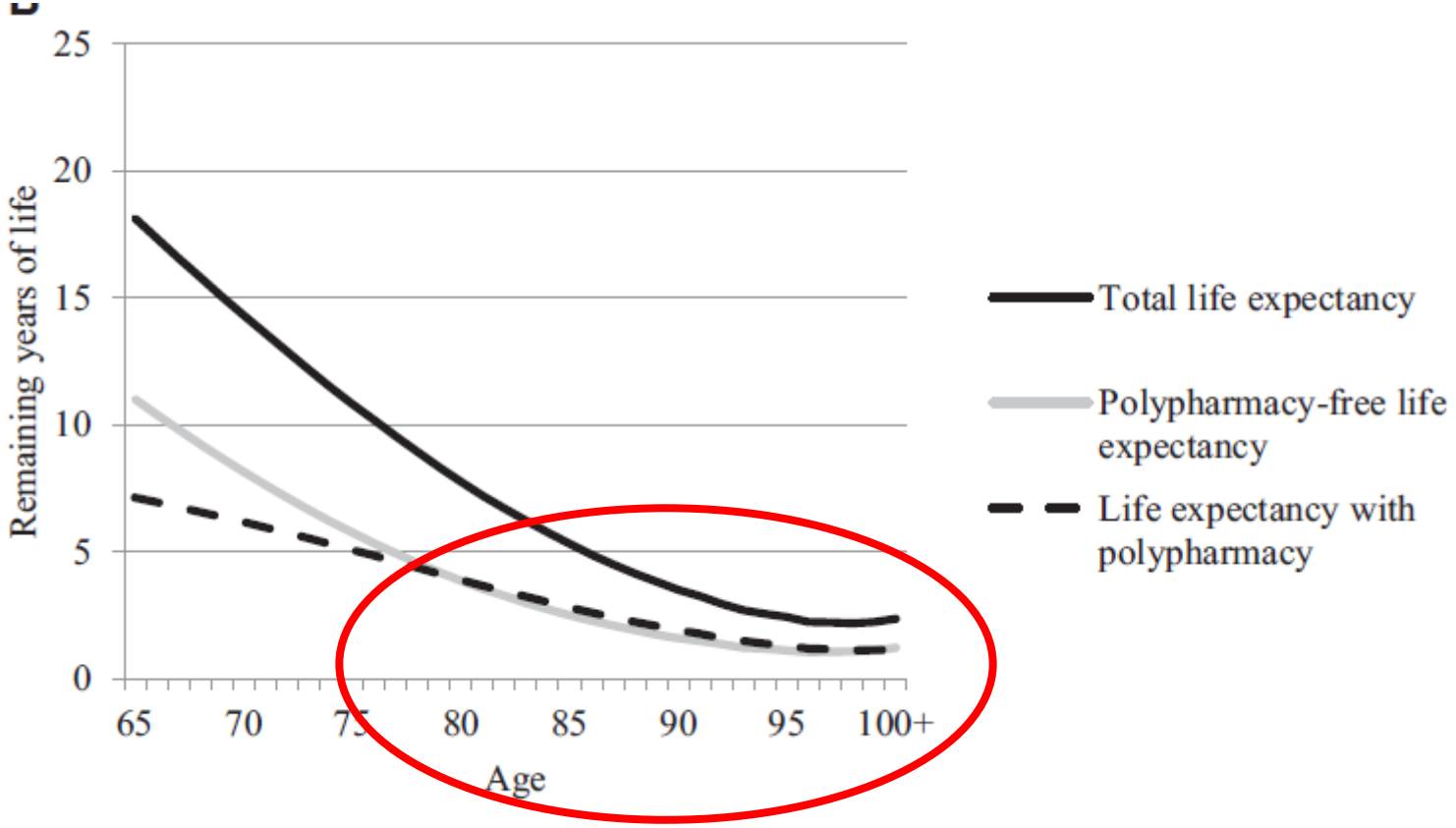
	Model 2		
	HR	95% CI	p
Daily number of drugs			
≥6	1.82	1.50–2.20	<0.001
1–5	1.31	1.15–1.50	<0.001
Nonmedicated (reference)	1.00	–	–
Age (years)	1.10	1.09–1.11	<0.001
Gender (women)	0.55	0.50–0.61	<0.001
Educational level			
Illiterate	1.03	0.86–1.23	0.757
Can read and write	0.99	0.86–1.14	0.894
Primary 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, fragilidad y mortalidad

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

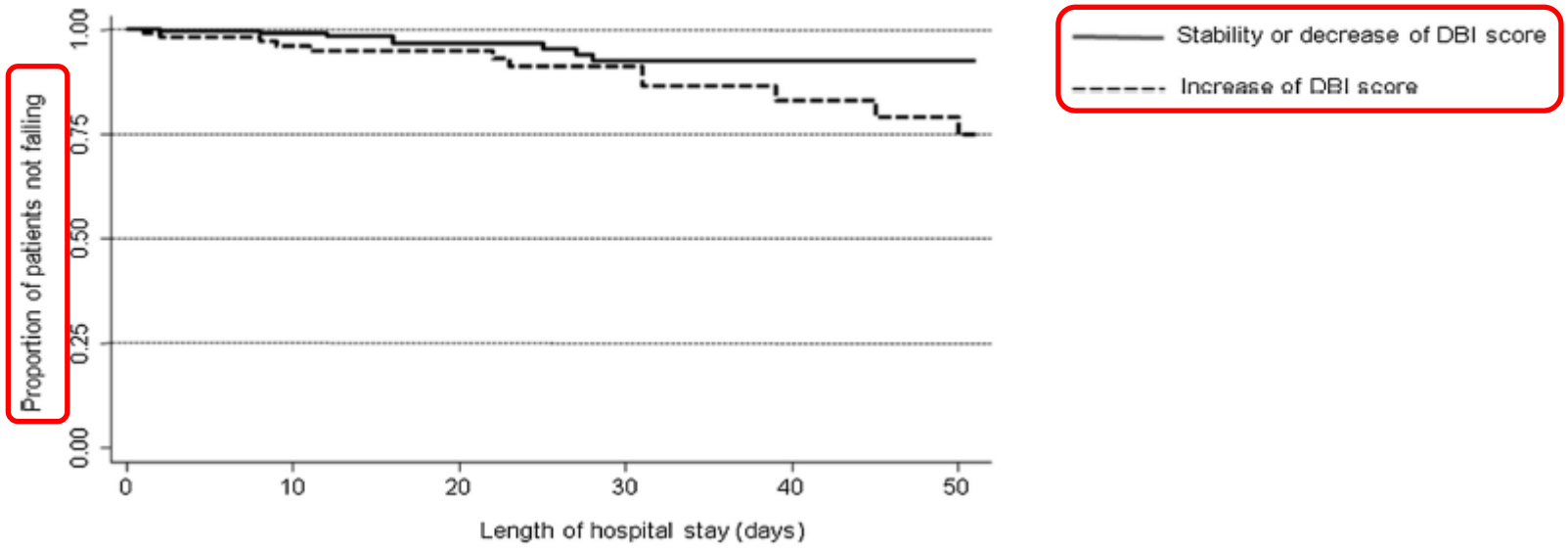
Jonas W. Wastesson PhD [a,b,*], Vladimir Canudas-Romo PhD [b], Rune Lindahl-Jacobsen PhD [b,c], Kristina Johnell PhD [a]

- N = 1.347.564.



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)

BMJ 2014;349:g5205

thebmj

Benzodiazepine use and risk of Alzheimer's disease

Results Benzodiazepine ever use was associated with an increased risk of Alzheimer's disease (adjusted odds ratio 1.51, 95% confidence interval 1.36 to 1.69; further adjustment on anxiety, depression and insomnia did not markedly alter this result: 1.43, 1.28 to 1.60). No association was found for a cumulative dose <91 prescribed daily doses. The strength of association increased with exposure density (1.32 (1.01 to 1.74) for 91-180 prescribed daily doses and 1.84 (1.62 to 2.08) for >180 prescribed daily doses) and with the drug half life (1.43 (1.27 to 1.61) for short acting drugs and 1.70 (1.46 to 1.98) for long acting ones).

Benzodiazepine Use and Risk of Developing Alzheimer's Disease or Vascular Dementia: A Case–Control Analysis

Patrick Imfeld[1,2] · Michael Bodmer[1] · Susan S. Jick[3] · Christoph R. Meier[1,2,3]

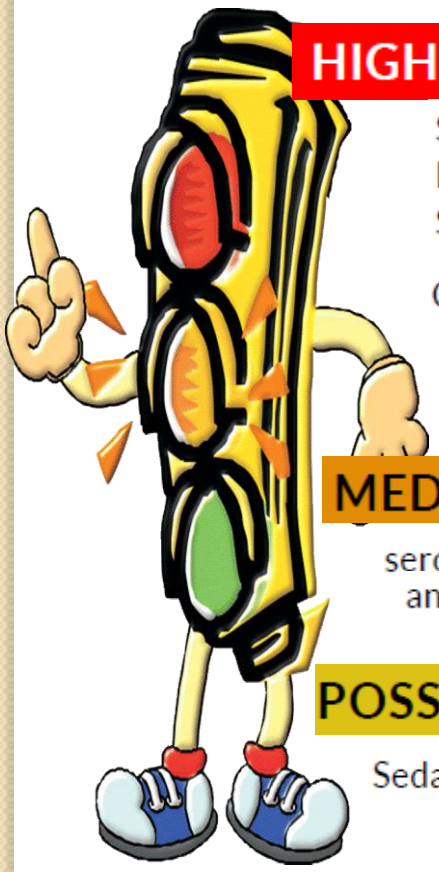
Drug Saf (2015) 38:909–919
DOI 10.1007/s40264-015-0319-3

Methods A case–control analysis was conducted using data from the UK-based Clinical Practice Research Datalink (CPRD). A total of 26,459 patients aged ≥65 years with newly diagnosed Alzheimer's disease (AD) or vascular dementia (VaD) between 1998 and 2013 were iden-

Results The aOR (95 % CI) of developing AD for those who started benzodiazepines <1 year before diagnosis was 2.20 (1.91–2.53), and fell to the null for those who started between 2 and <3 years before [aOR 0.99 (0.84–1.17)]. The aOR (95 % CI) of developing VaD for those who started benzodiazepines <1 year before diagnosis was 3.30 (2.78–3.92), and fell close to the null for those who started between 3 and <4 years before [aOR 1.16 (0.96–1.40)]. After accounting for benzodiazepine use initiated during this prodromal phase, long-term use of benzodiazepines was not associated with an increased risk of developing AD [aOR 0.69 (0.57–0.85)] or VaD [aOR 1.11 (0.85–1.45)].

How medicines can cause falls

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

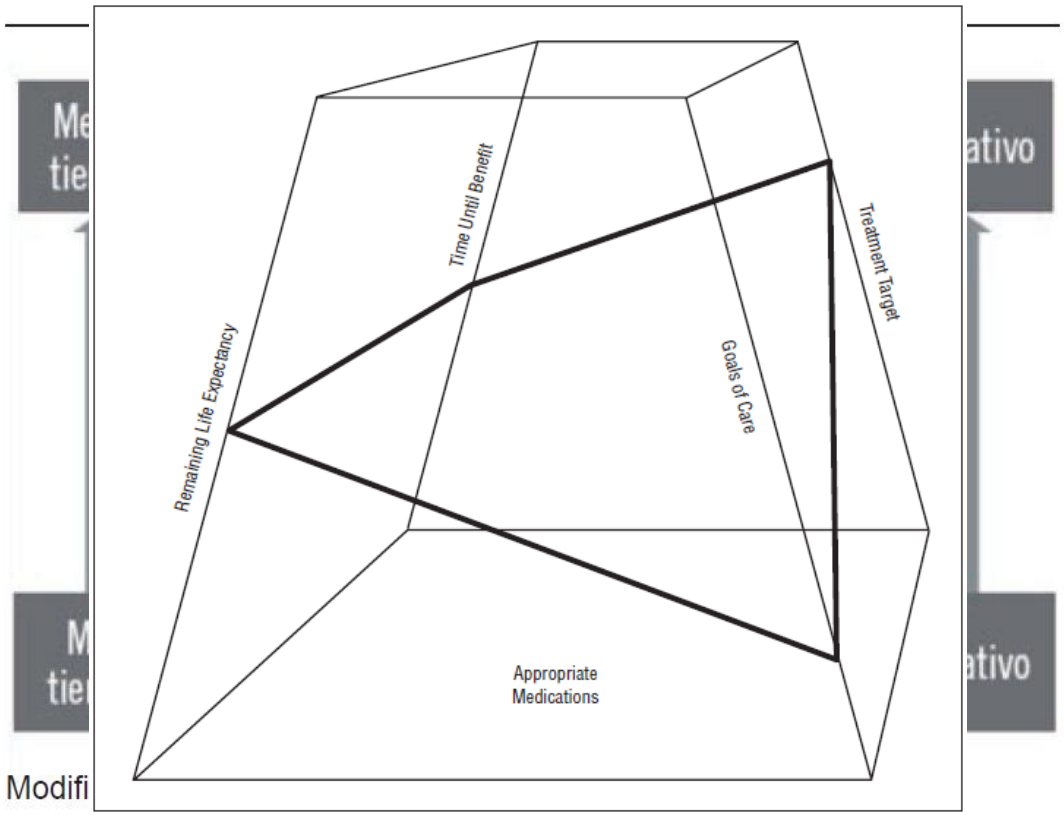
Cause syncope.

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 al 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
- Retirada programada 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	80-84: 60
					85-89: 11	85-89: 55
			Hip secondary prevention		80-84: 21	80-84: 105
					85-89: 9	85-89: 45

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

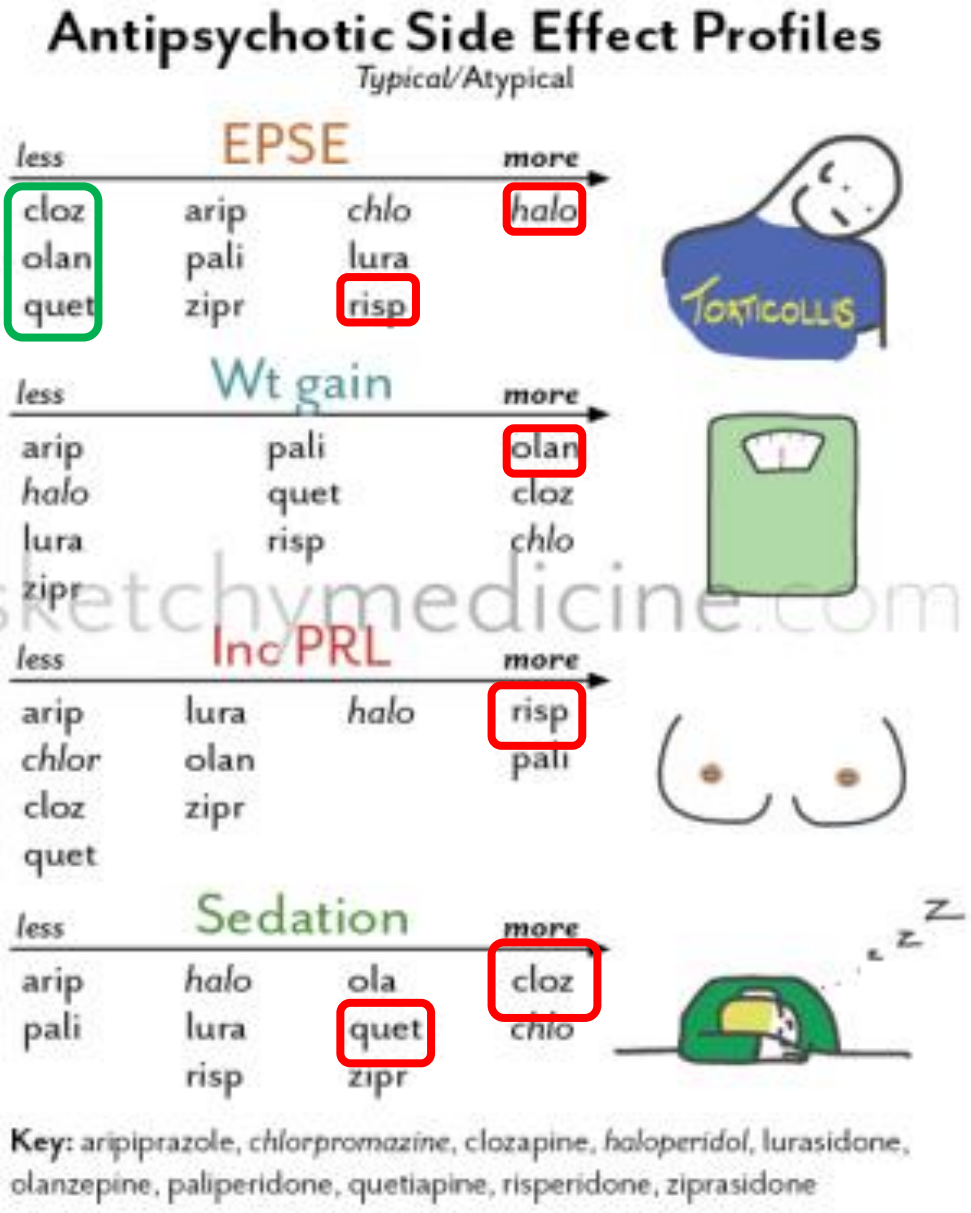
Rarely appropriate

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)**

PARKINSON

Pharmacological Treatment of Parkinson Disease
A Review JAMA. 2014;311(16):1670-1683.

1. EFECTO EXTRA-PIRAMIDAL DEL TRATAMIENTO:
    1. PROCINÉTICOS → DOMPERIDONA
    2. NEUROLÉPTICO
        A. VO:
            i. QUETIAPINA
            ii. CLOZAPINA
        B. PARENTERAL NO DEPOT:
            i. ARIPIPRAZOL
    3. ANTIDEPRESIVOS
        A. SERTRALINA
        B. CITALOPRAM
2. TENDENCIA NATURAL DE LA ENFERMEDAD Y POR USO DOPAMINÉRGICOS AL ESTREÑIMIENTO:
    1. USO DE LAXANTES

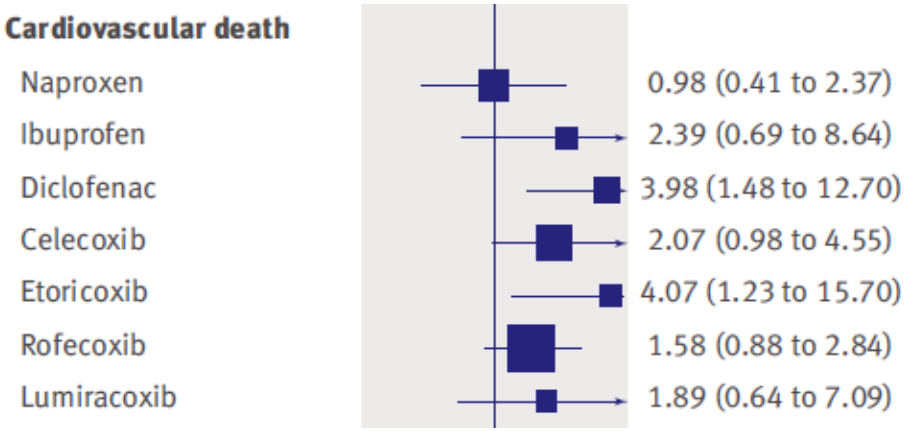
DOLOR

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

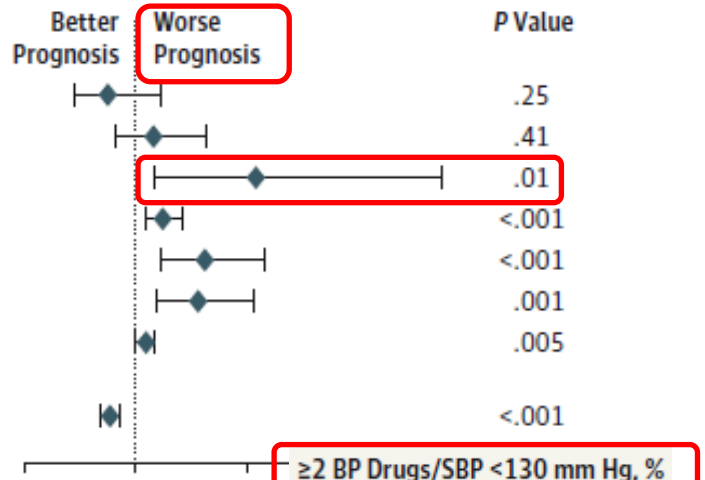
TRAMADOL/MEPERIDINA ➔ Sde Confusional / Sde Serotoninérgico

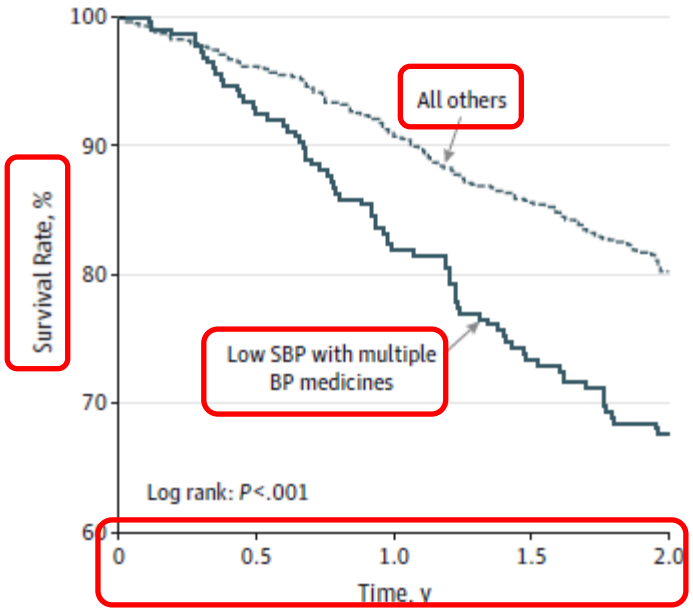
HIPERTENSIÓN ARTERIAL

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



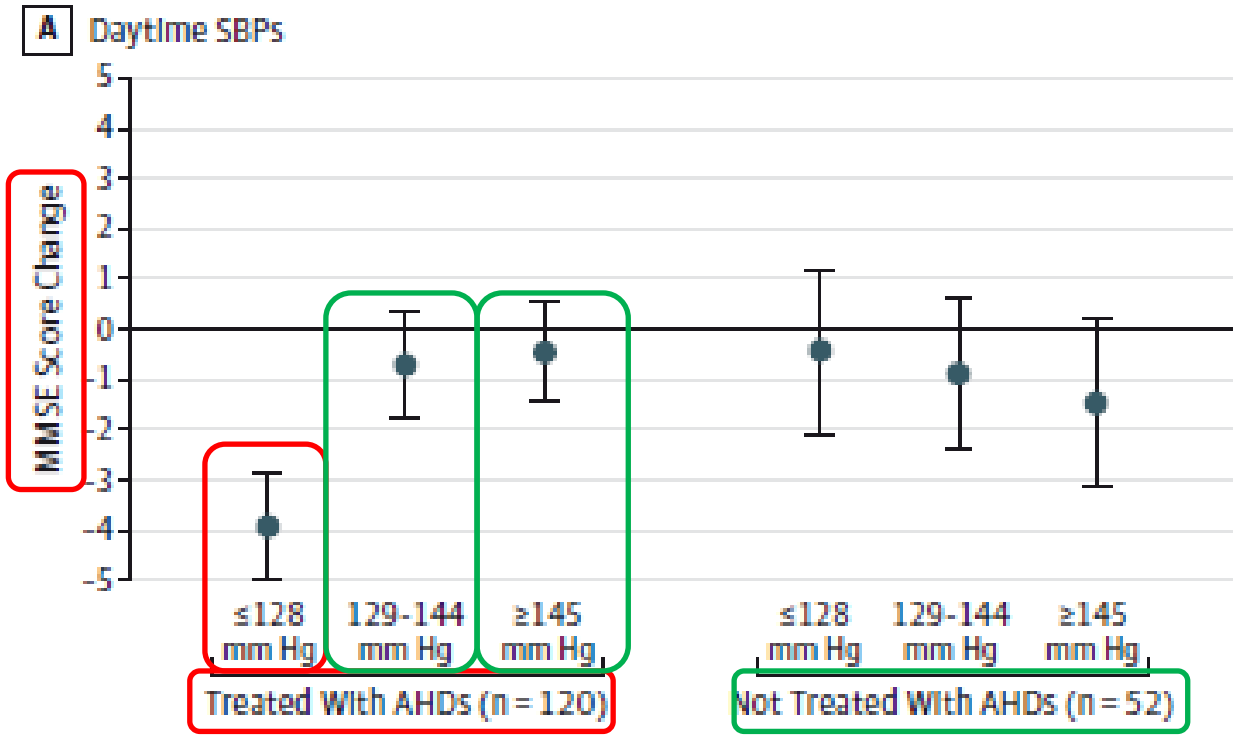


Characteristic	Yes/Yes	All Others[a]
Patients, No. (%)	227 (20.1)	900 (79.9)
Stroke	4.4[b]	1.4
Heart failure	5.7[c]	3.0
CHD and sudden death	2.2	3.2
Other CV	2.2	1.8
All CV deaths	14.5[c]	9.4
Cancer	4.4[c]	1.8
Infection	3.1	2.3
Fracture	1.3	0.4
Other non-CV deaths	8.8[c]	5.7
All non-CV deaths	17.6[d]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

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

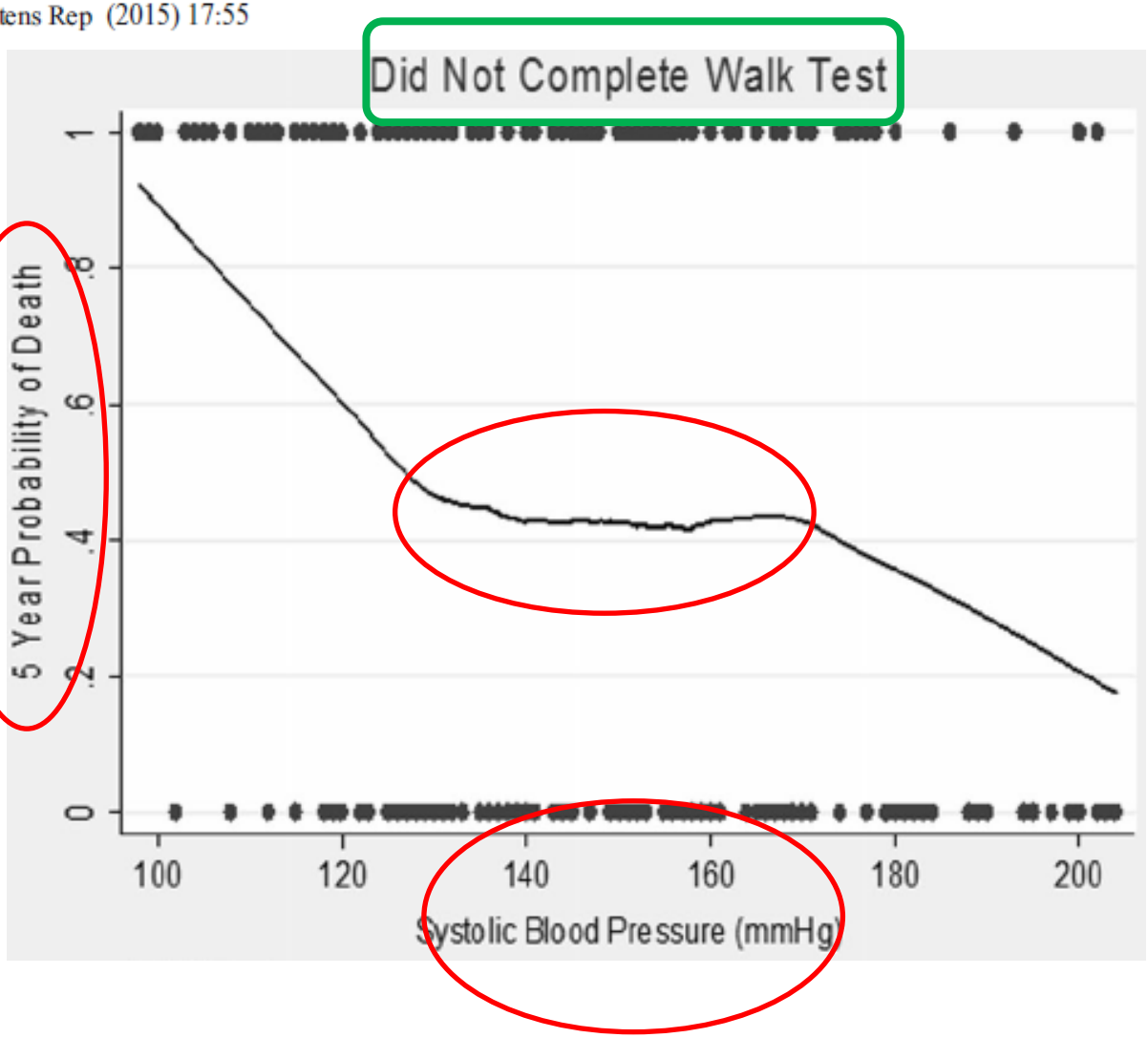
JAMA Intern Med. 2015;175(4):578-585.

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



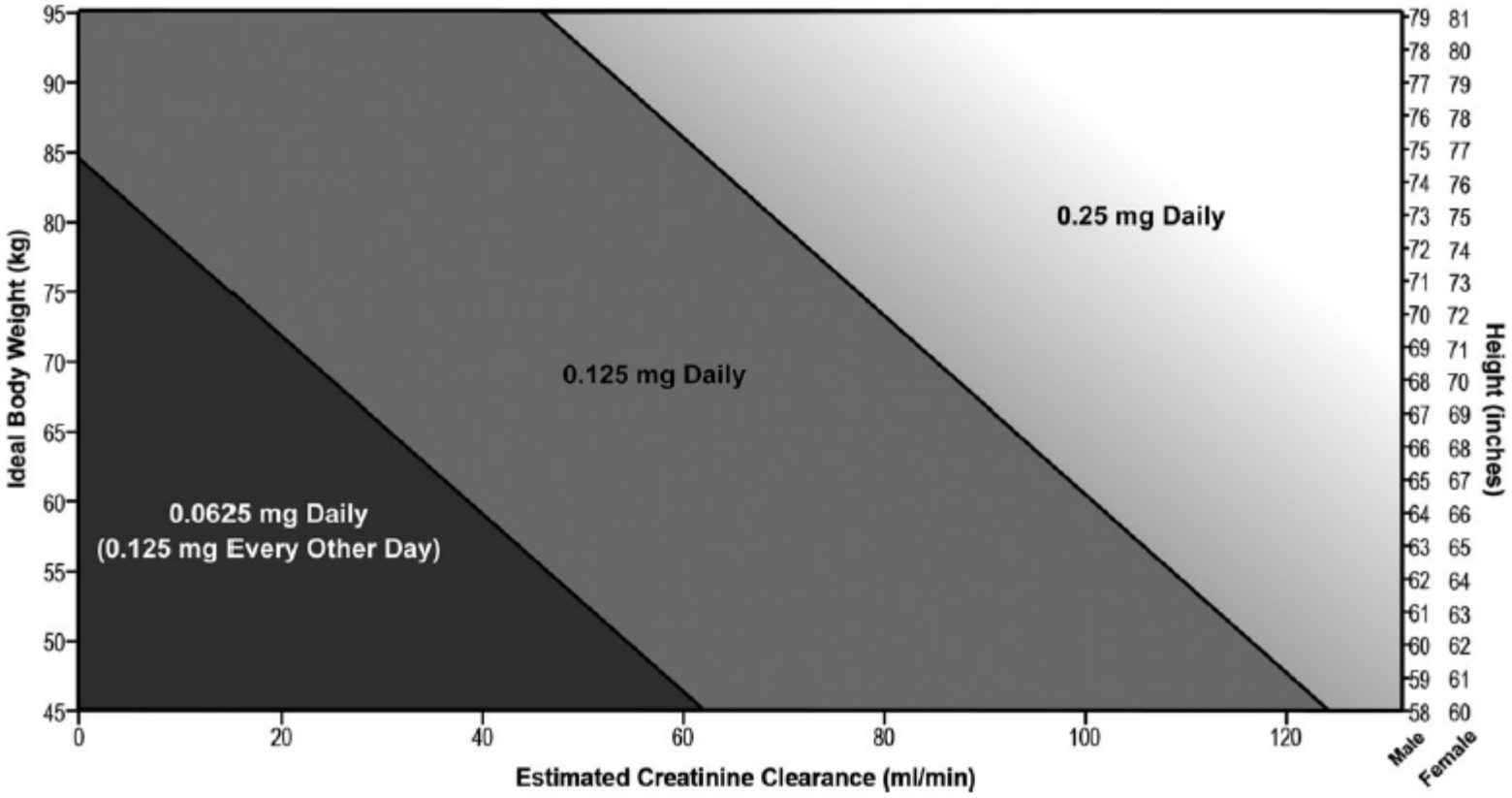
ESTRATEGIAS DE OPTIMIZACIÓN EN SITUACIONES CLÍNICAS CONCRETAS: SISTEMA CARDIOVASCULAR

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.**



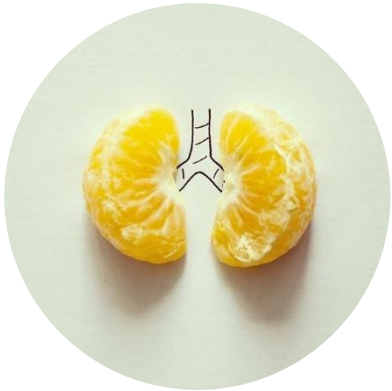
NEUMONÍA

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

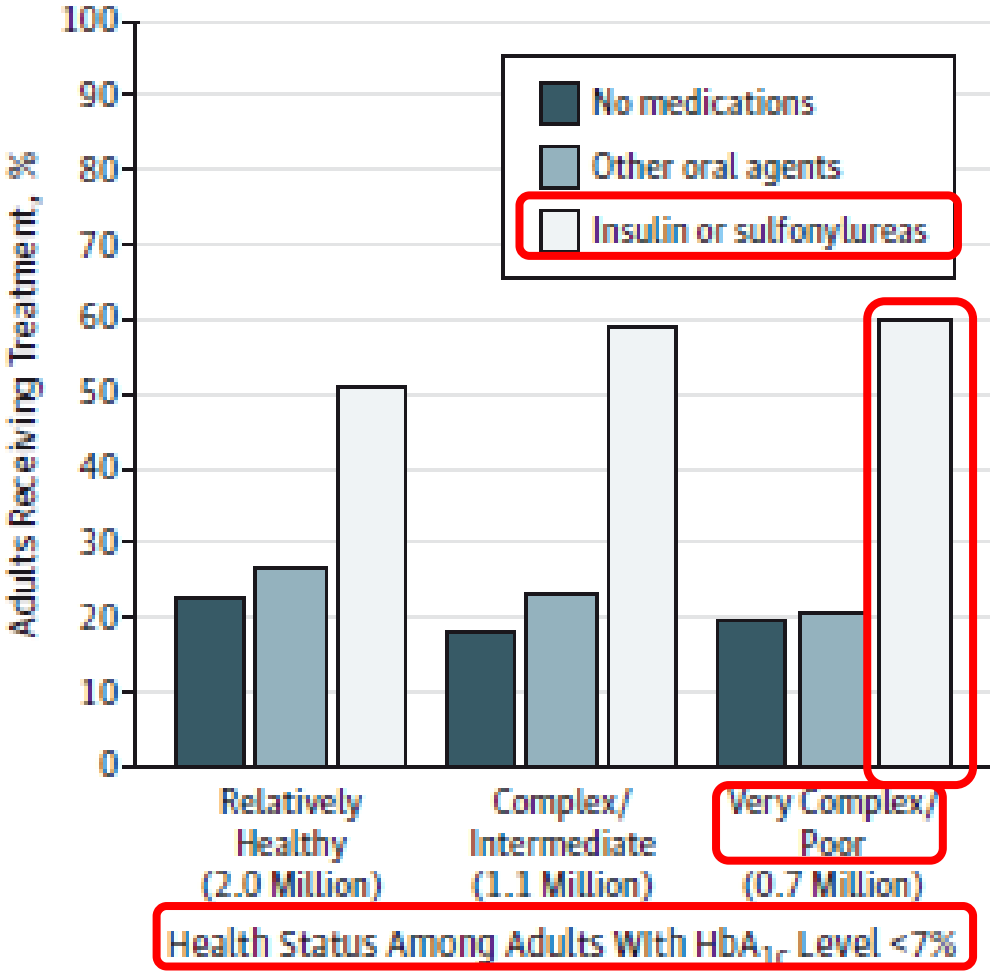
Table 1. A Framework for Considering Treatment Goals for Glycemia, Blood Pressure, and Dyslipidemia in Older Adults with Diabetes

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)

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



HIPOTIROIDISMO

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

JAMA. 2004;292:2591-2599

Design, Setting, and Participants A prospective, observational population-based follow-up study within the Leiden 85-Plus Study of 87% of a 2-year birth cohort (1912-1914) in the municipality of Leiden, the Netherlands. A total of 599 participants were followed up from age 85 years through age 89 years (mean [SD] follow-up, 3.7 [1.4] years).

Results Plasma levels of thyrotropin and free thyroxine were not associated with disability in daily life, depressive symptoms, and cognitive impairment at baseline or during follow-up. Increasing levels of thyrotropin were associated with a lower mortality rate that remained after adjustments were made for baseline disability and health status. The hazard ratio (HR) for mortality per SD increase of 2.71 mIU/L of thyrotropin was 0.77 (95% confidence interval [CI], 0.63-0.94; $P=.009$). The HR for mortality per SD increase of 0.21 ng/dL (2.67 pmol/L) of free thyroxine increased 1.16-fold (95% CI, 1.04-1.30; $P=.009$).

CASO CLÍNICO

- JUAN, 67 años, casado y con 2 hijos. Fumador
- Autónomo e independiente; sin deterioro cognitivo.
- HTA, osteoartritis, Dislipemia
- Recién diagnóstico de parkinson

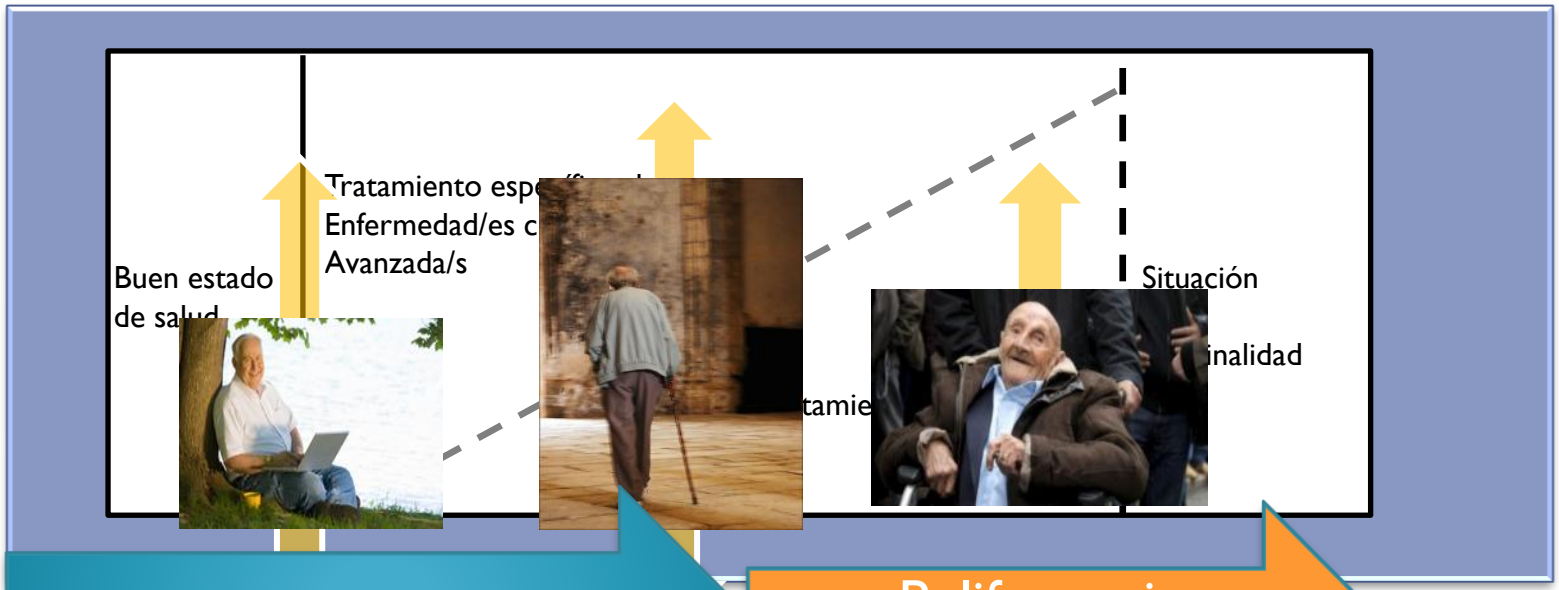
- Tratamiento:
  - Enalapril 10 mg c/12h
  - Paracetamol 650 mg c/8h si precisa
  - Simvastatina 40 mg c/24h
  - Levodopa/Carbidopa 100/25 0.5 compr c/12h

CASO CLÍNICO

- JUAN, 77 años, casado y con 2 hijos.
- Ex-fumador desde hace 2 años por episodio de bronquitis y pneumonia que requirió ingreso hospitalario. Diagnóstico de EPOC e hiperglicemia no conocida
- HTA, DL. Insomnio y depresión
- Dolor por osteoartritis y parkinson (progresión) que limitan la marcha y la autonomía del paciente.
- Acude a urgencias por episodio de ataxia. Diagnóstico: AIT/Ictus
- Tratamiento:
  - Enalapril 10 mg c/12h
  - Amlodipino 5 mg c/24h
  - Paracetamol 1000 mg c/8h
  - Diclofenaco retard 100 mg c/12h
  - Omeprazol 20 mg c/24h
  - Simvastatina 40 mg c/24h
  - Lorazepam 1 mg c/24h
  - Tiotropio 18 mcg c/24h
  - metformina 850 c/12h
  - AAS 300 mg c/24h
  - Levodopa/Carbidopa 100/25 1 compr c/8h
  - Lactulosa 10 mL c/24h
  - Sertralina 50 mg c/24h

CASO CLÍNICO

- JUAN, 85 años. Viudo. 1 hijo vive en Alemania. El otro hijo con cargas familiares.
- Vive en residencia. Ind Barthel 45
- Deterioro cognitivo avanzado (asociado a Parkinson) con episodios sindrome confusional.
- HTA, dislipemia, EPOC, Parkinson, DM2, AIT/Ictus, osteoartritis
- IRC (TFG 38 ml/min). Dos caídas en el último año.
- Tratamiento:
  - Enalapril 10 mg c/12h
  - Amlodipino 5 mg c/24h
  - Paracetamol 1000 mg c/8h
  - Diclofenaco retard 100 mg c/12h
  - Omeprazol 20 mg c/24h
  - Atorvastatina 40 mg c/24h
  - AAS 300 mg c/24h
  - Lorazepam 1,5 mg c/24h
  - Sertralina 100 mg c/24h
  - Tiotropio 18 mcg c/24h
  - Salmet/fluticasona 25/250 c/12h
  - Metformina 850 mg c/12h
  - Ins Detemir 8 UI/d
  - Levodopa/Carbidopa 100/25 1 compr c/8h
  - Lactulosa 10 mL c/24h
  - Quetiapina 50 mg c/24h noche
  - Rivastigmina 4.6 mg c/24h



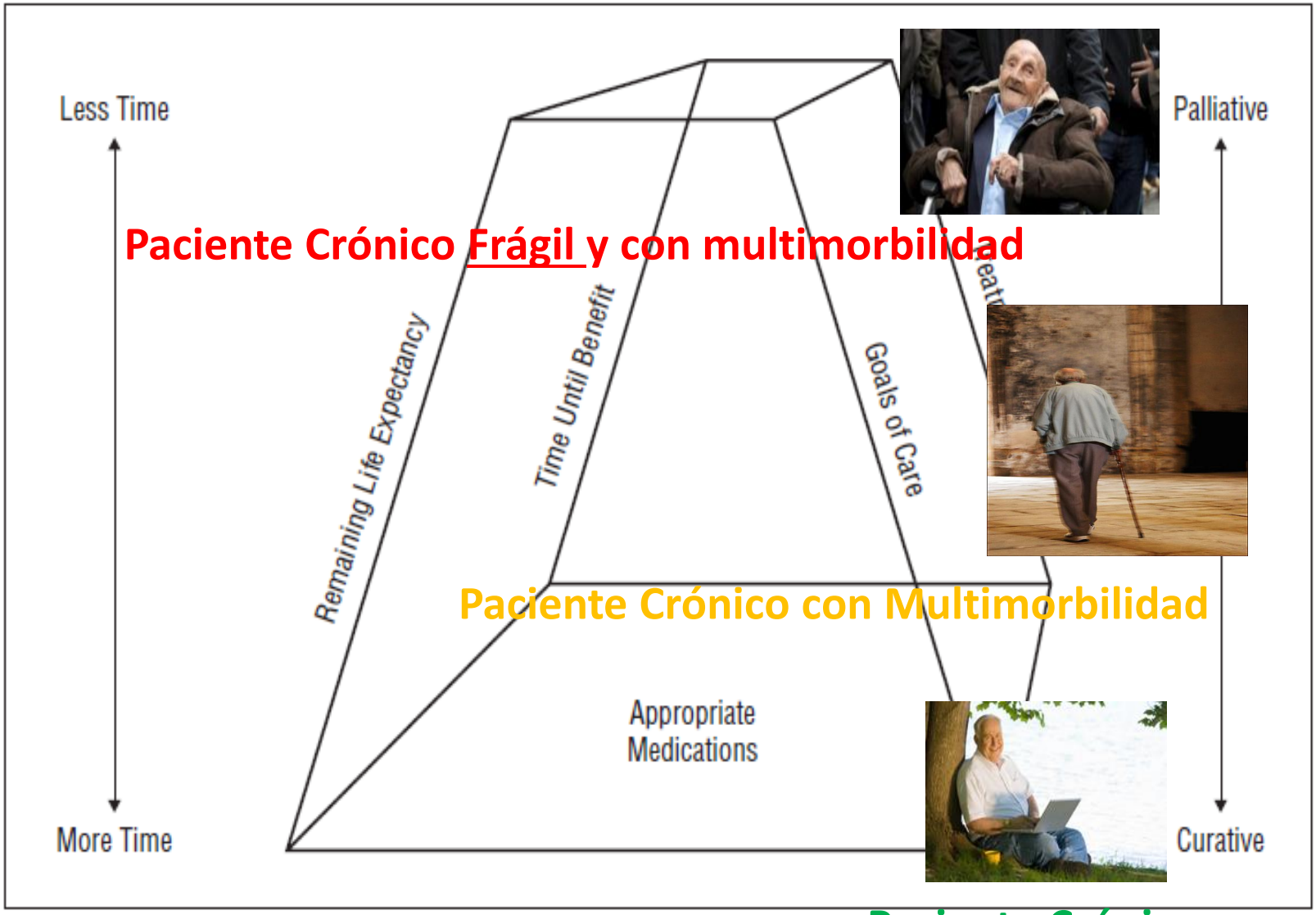
Polifarmacia Adecuada

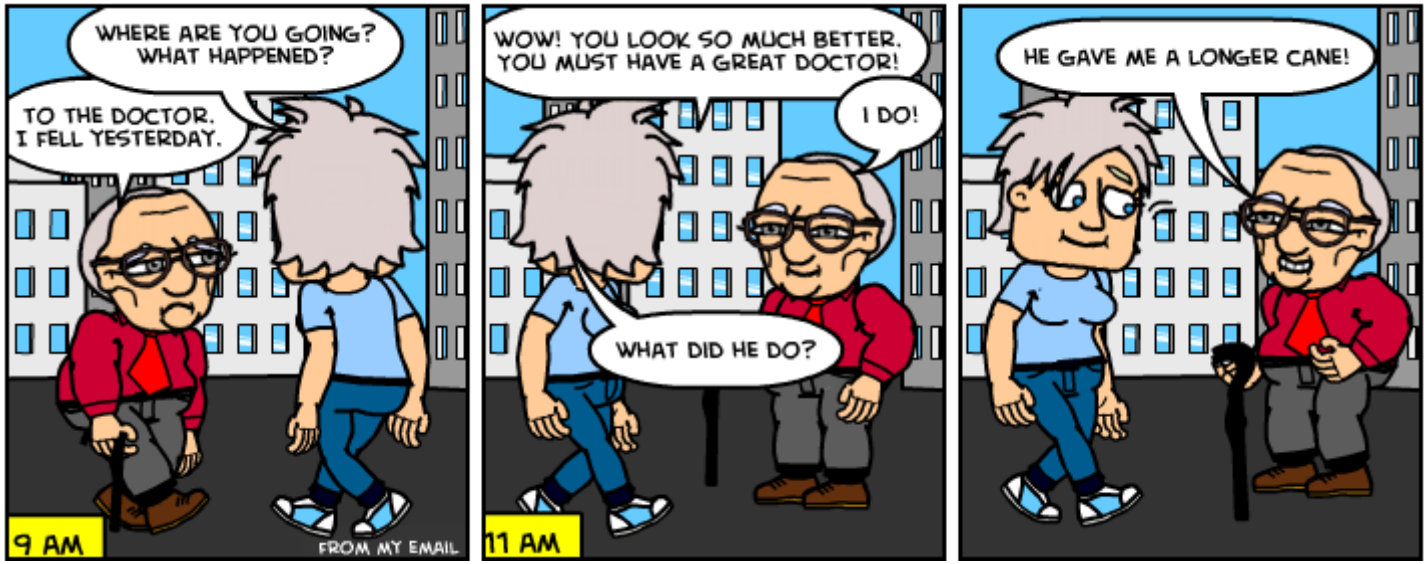
Polifarmacia Inadecuada

4 fcos. **13 fcos.** **17 fcos.**

- **Paracetamol 1000 mg c/8h**
- **Lorazepam 1,5 mg c/24h**
- **Quetiapina 50 mg c/24h**
- **Lactulosa 10 mL c/24h**
- **Inhal ➔ nebulizadores**
- **Insulina + metformina ➔ repaglinida 1 mg c/8h**

- **Glibenclamida 5 mg 1-1-0**
- **Ins Detemir 8 UI/d**
- **Rivastigmina 4.6 mg c/24h**
- **AAS 300 mg c/24h**
- **Omeprazol 20/d**
- **Atorvastatina 40 mg c/24h**
- **Diclofenaco 100 mg c/12h**
- **Enalapril 10 mg c/12h**
- **Amlodipino 5 mg**
- **Sertralina 100 mg c/24h**


Less Time
More Time
Palliative
Curative
Remaining Life Expectancy
Time Until Benefit
Goals of Care
Appropriate Medications
Paciente Crónico Frágil y con multimorbilidad
Paciente Crónico con Multimorbilidad
Paciente Crónico



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