











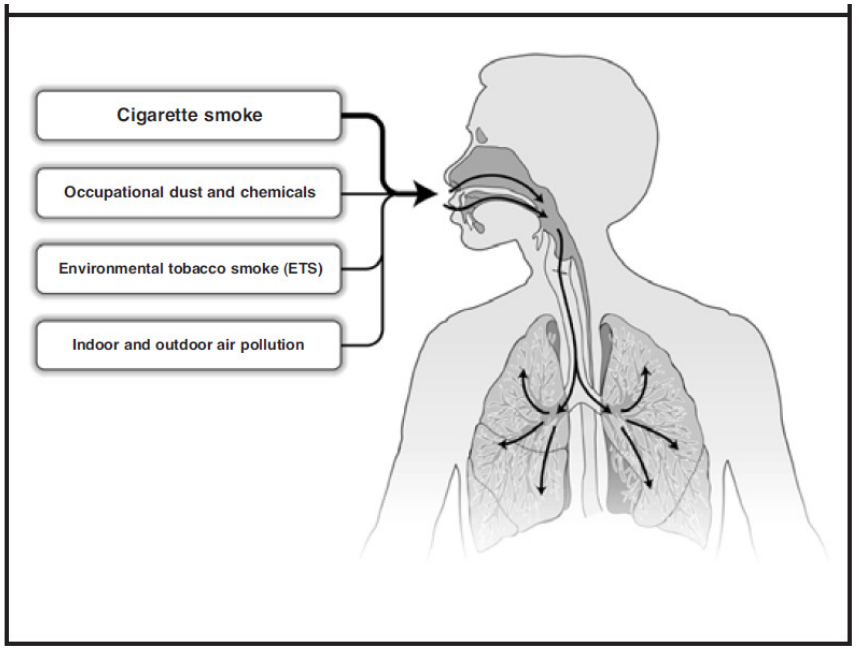
Enfermedad Pulmonar Obstructiva Crónica

Dra. Ivonne Becerra Laparra

Tutor: Dr. Clemente Zúñiga Gil

EPIDEMIOLOGÍA

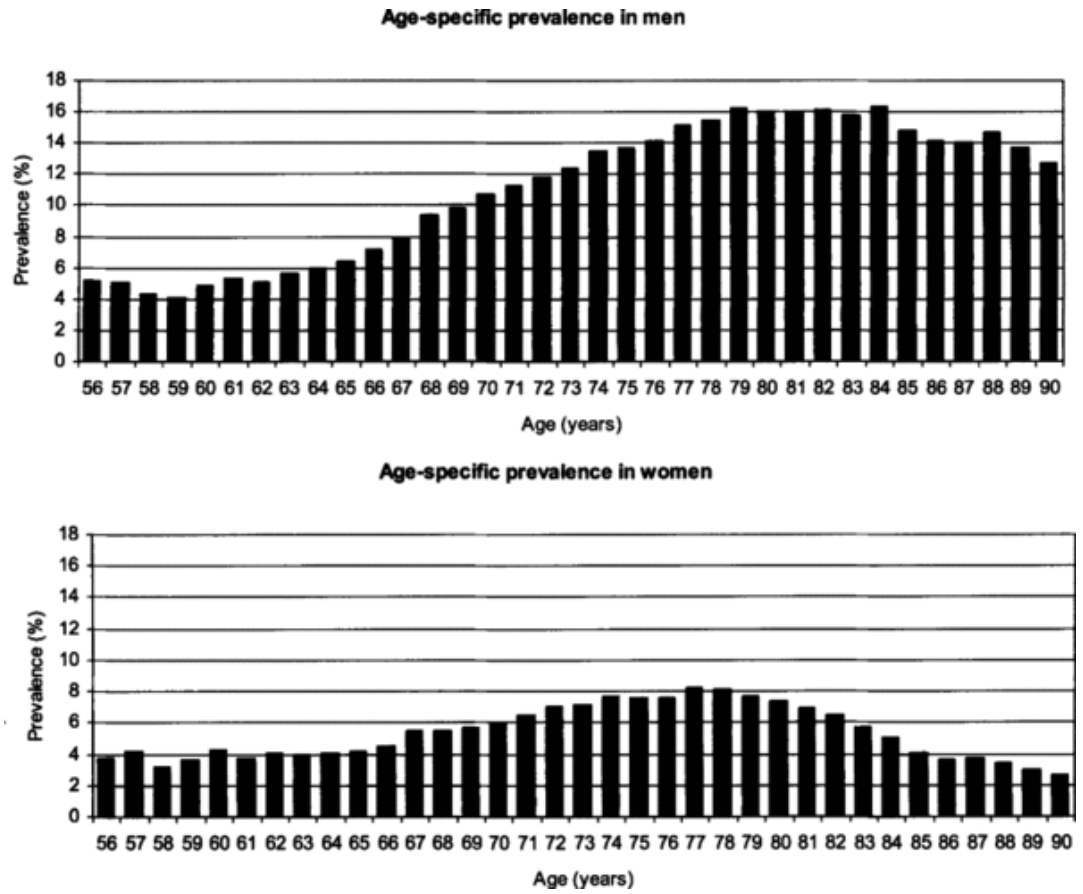
- 10% en > 40 años, ↑ considerable si factores de riesgo.
- 20% si tienen factores de riesgo conocidos.
- 1/5 de hospitalizaciones en > 65 años.
- 1 de c/5 personas que asisten a consulta tienen EPOC, y 2/3 desconocen presencia de EPOC.



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Lopez AD, Shibuya K, Rao C, et al. Chronic obstructive pulmonary disease: current burden and future projections.. Eur Respir J 2006 Feb; 27 (2): 397-412
Hill K, et al.Prevalence and underdiagnosis of COPDamong patiens al risk in primary care. CMAJ,2010; 182(7): 673-678

EPIDEMIOLOGÍA

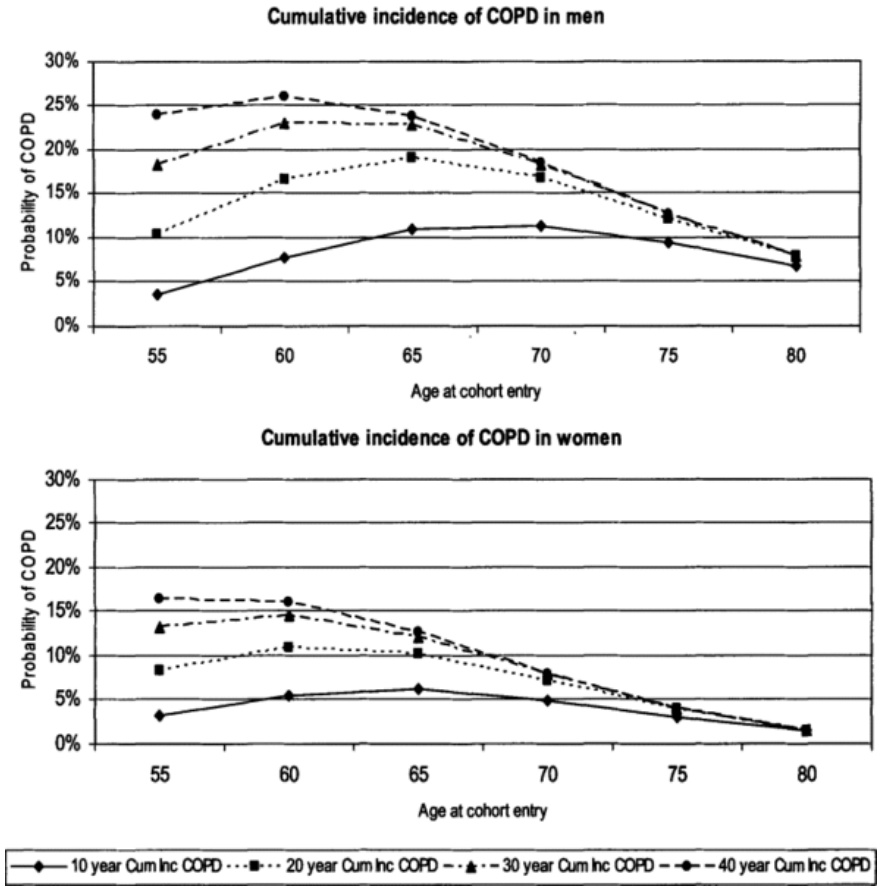


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Prevalence, Incidence, and Lifetime Risk for the Development of COPD in the Elderly. *Chest, 2009;135(2).*

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Riesgo acumulado de EPOC



The cumulative incidence of COPD over the 15.5 years of follow-up time of the cohort was 6.7% (95% CI, 5.5 to 8.0). . shows the 10-, 20-, 30-, and 40-year risks for COPD to develop in men and women who are still free of the disease at a certain age, adjusted for the competing risk of dying. For a man free of COPD at 55 years of age, the risk for COPD over the coming 10, 20, 30, and 40 years was 4%, 10%, 18%, and 24%, respectively. For a woman, the risk was 3%, 8%, 13%, and 16%, respectively

Prevalence, Incidence, and Lifetime Risk for the Development of COPD in the Elderly. *Chest, 2009;135(2).*

Clasificación EPOC según severidad

FEV1 p-broncodilatador

Estadio	Características	
	FEV1 (% del valor teórico)	FEV1/FVC
0: En riesgo*	Espirometria normal	≥ 0,7
I: EPOC leve	> 80	< 0,7
II. EPOC moderada	50-80	< 0,7
III. EPOC grave	30-50	< 0,7
IV. EPOC muy grave	< 30	< 0,7

FEV1 <50% + falla respiratoria crónica*

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*Falla respiratoria: PaO2 < 8.0kPa (60 mmHg) con o sin PaCO2 > 6.7kPa (50mmHg) mientras respira a nivel del mar.

Morbi-mortalidad EPOC III-IV en Adultos Mayores

- The Global Burden of Disease Study: 6ª causa de muerte en 1990 y 3ª en 2020.
- Mortalidad en hospitalización 7.4%, a 90 días de egreso del 15%, y a 1 año 36% a 59%.
- 3 a 4 admisiones hospitalarias anuales por exacerbación: pobre calidad de vida, discapacidad física severa, soledad, síntomas depresivos y ansiosos.
- La sobrevida a 5 años de adulto mayor con cáncer es de 62.7%.

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Age Ageing 2005,34:491-496.
JAMA 1995,274:1852-1857

Impacto de EPOC severo en Vida Diaria

	% de pacientes COPD moderado	COPD III-IV	p
COPD work impact (last 4 weeks)			
Work time reduced	44.6%	64.7%	0.0001
Do less of what one wishes to do	60.8%	78%	0.0001
Quit doing some tasks	48.7%	68.4%	0.0001
Difficulty on doing the job	51%	72%	0.0001
Sick leave because of COPD (last year)			
Yes	12.1%	7.9%	0.0001
No	17%	12.5%	
Permanent disability	5.9%	9.8%	
Not applicable: retired, unemployed	65%	69.8%	
*Absent time previous year (days)	30.5 (22.8–38.2)	61.1 (42.2–73.9)	0.0001
COPD economic repercussion			
No importance	21.5%	9.3%	0.0001
Low importance	29.7%	24.4%	
Moderate importance	32.7%	31.4%	
High importance	14.6%	28.9%	
Very high importance	1.5%	6%	
Family habits changes because of COPD			
No importance	17.6%	6.5%	0.0001
Low importance	29.95%	19%	
Moderate importance	31.8%	31.3%	
High importance	18.6%	33.4%	
Very high importance	2.1%	9.8%	
*EQ-5D: VAS (score points)	58.9 (58.1–59.9)	45.9 (44.9–46.7)	0.0001

Variable values as mean (CI 95%). Shadowed boxes: significant p-values (< 0.05). EQ-5D, EuroQol 5D; VAS, visual analogue scale.

1596 px EPOC II
2012 px EPOC III-IV

Rodríguez González-moro, et al. *Int J Clin Pract,* 2009;63(5):742-750

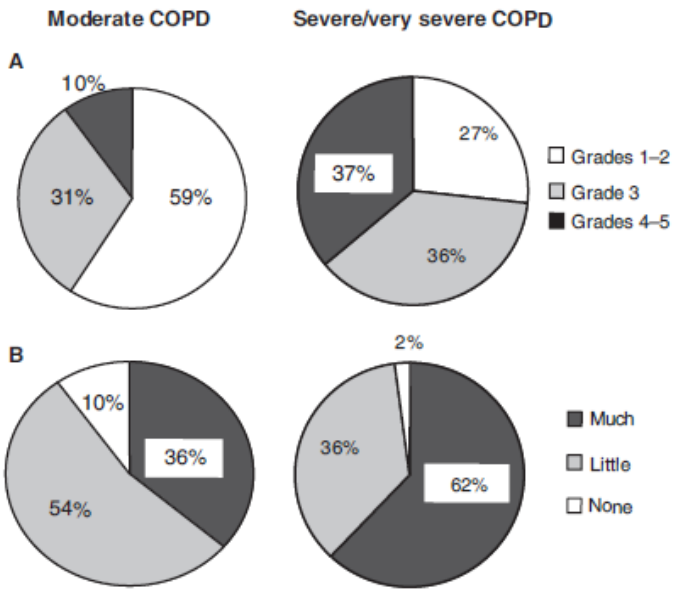
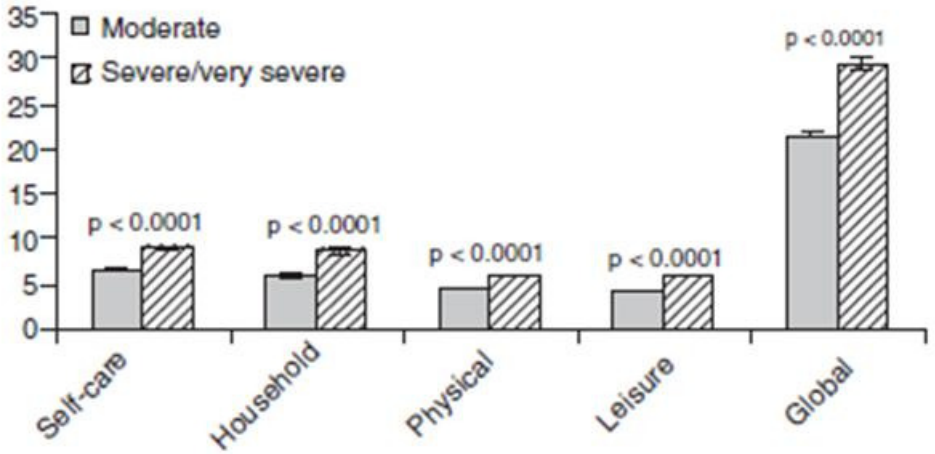


Table 4 LCADL items mean scores in moderate or severe/very severe COPD patients

	Moderate	Severe/ very	p-value
Self-care			
Getting dry	1.49	2.07	0.0001
Getting upper body dressed	1.54	2.14	0.0001
Getting shoes/socks on	2.07	2.67	0.0001
Washing hair	1.52	2.2	0.0001
Household chores			
Making bed	1.08	1.55	0.0001
Changing sheets	1.01	1.5	0.0001
Cleaning windows/curtains	0.96	1.49	0.0001
Cleaning the dust	0.88	1.4	0.0001
Washing dishes	0.9	1.35	0.0001
Vacuum/sweeping	1.04	1.49	0.0001
Physical activity			
Going up the stairs	2.5	3.15	0.0001
Bending down	2.14	2.71	0.0001
Leisure activities			
Walking at home	1.34	1.91	0.0001
Going out	1.73	2.41	0.0001
Talking	1.24	1.56	0.0001

LCADL, London Chest Activity of Daily Living.



LCADL:London Chest Activity of Daily Living
MRC: Medical Research Council

P=<0.0001

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Ansiedad, Depresión y Soledad

- Prevalencia de depresión: 22% - 40%
- Prevalencia de ansiedad: 10-80%
- Trastorno de ansiedad: 10-32%
- Trastorno de ansiedad generalizada y ataques de pánico: 33%
- 1828 pacientes, de 28-89 años, 96% mayores de 60 años (NEET)

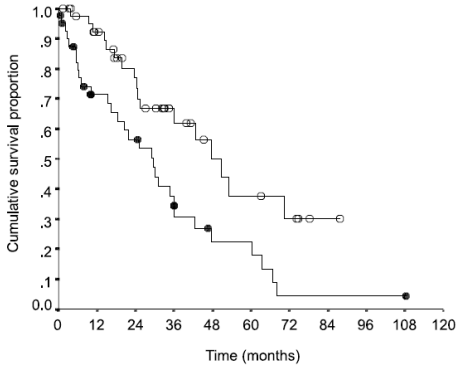


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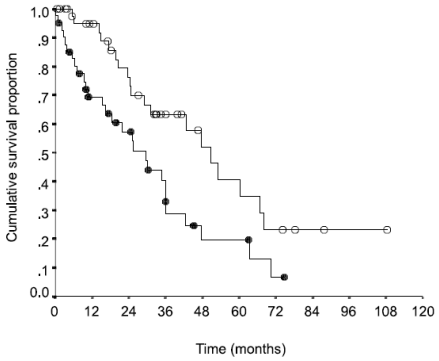
Giardino et al. Anxiety is associated with diminished exercise performance and quiality of life in severe emphysema: a cross-sectional study. Respiratory Research 2010, 11:29

Impacto de Depresión, Ansiedad y soledad en EPOC terminal

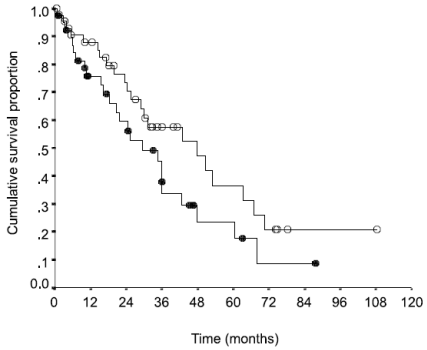
- CRQ (Chronic Respiratory Questionary):
- Disnea
- Función emocional
- Fatiga
- Dominio



Emocional
Sobrevida media 50.8 vs 29.5 meses
p=0.004



Mastery
Sobrevida media 42.8 vs 30 meses
p=0.010



Fatiga
Sobrevida media 47.7 vs 29.5 meses
p=0.10

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Crockett, et al. The impact of anxiety depresion and living alone in chronic obstructive pulmonary disease. Quality of life research 2002,11:309-316

Impacto de Depresión, Ansiedad y soledad en EPOC terminal

	Sobrevida (meses) Viven solos	Sobrevida (meses) Viven acompañados
Hombres	21.9	36.6
Mujeres	31.1	42.8

La sección emocional del CRQ es un predictor significativo de sobrevida.

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Crockett, et al. Yhe impact of anxiety depresion and living alone in chronic obstructive pulmonary disease. Quality of life research 2002,11:309-316

¿Porqué no dar cuidados paliativos a pacientes con EPOC III-IV?

Cuidados Paliativos en EPOC IV

Beneficios

- Objetivo: control de síntomas y mejorar CVAE.
- Mejor comunicación con el paciente, la familia y el médico.
- Mejor planeación de estrategias de tratamiento.
- Atención multidisciplinaria
- Atención a las necesidades psicológicas, espirituales y psicosociales
- Atención continua de ansiedad y depresión

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Mengistu Abebaw, et al. Palliative care provision for patients with chronic obstructive pulmonary disease. *Health and Quality of life Outcomes,*2007;5(17):

Calidad de Vida Relacionada a Salud

- ***CVRS:*** *"el nivel de bienestar y satisfacción asociado a la vida de un individuo y cómo ésta es afectada por la enfermedad, los accidentes y los tratamientos, desde el punto de vista del paciente".* Es un indicador de resultados de salud.
- ***Calidad de vida:*** rango amplio de constructos, ejemplo la satisfacción con el entorno y el sistema político que quedarían fuera del concepto de CVRS.

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Montse Ferrer. Medición de la calidad de vida relacionada con la salud en Patología pulmonar

Lovatt B. An overview of quality of life assessments and outcome measures. Br J Med Econ 1992; 4:1-17.

Calidad de Vida Relacionada a Salud en EPOC

- CVRS aporta información adicional: estado de salud del paciente *, predice riesgo de muerte**, hospitalización y/o utilización de recursos sanitarios ***.

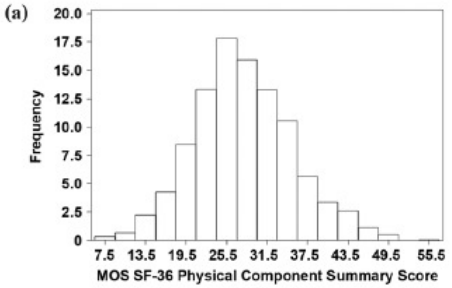
- El FEV1 es el indicador de gravedad por excelencia debido a su valor pronostico.

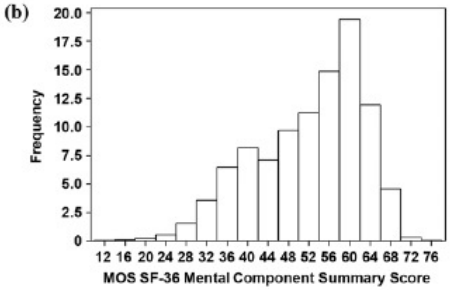
*Ferrer M, et al. Chronic obstructive pulmonary disease stage and health-related quality of life. **The Quality of Life of Chronic Obstructive Pulmonary Disease Study Group. Ann Intern Med 1997; 127(12):1072-1079.
**Domingo-Salvany A, et al. Health-related quality of life and mortality in male patients with chronic obstructive pulmonary disease. Am J Respir Crit Care Med 2002; 166(5):680-685.
***Almagro P, et al. Mortality afterhospitalization for COPD. Chest 2002; 121(5):1441-1448.
***Osman LM, etal.Quality of life and hospital readmission in patients with chronic obstructive pulmonary disease. Thorax 1997; 52(1):6771.
***Soler JJ,et al. Risk factors of emergency care and admissions in COPD patients with high consumption of health resources. Respir Med 2004; 98(4):318-329.
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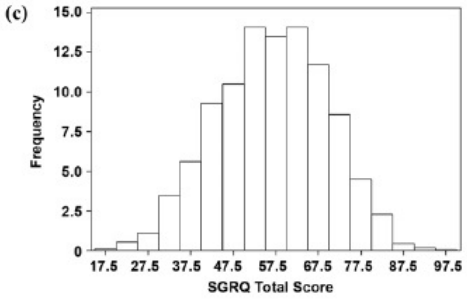
Determinantes Independientes de CVRS en EPOC severo

- 1621 pacientes con EPOC severo.
- MOS SF-36 PCS: 28 ± 7
- MOS SF-36 MCS: 52 ± 10
- SGRQ-TS: 57 ± 13
- QWB-SA

- Depresión en 22%
- Hipersomnia diurna 55%
- Mala autopercepción de salud en 68%







JRRD Volume 46, Number 5, 2009 Pages 643–654
Journal of Rehabilitation Research & Development

Multivariate models of determinants of health-related quality of life in severe chronic obstructive pulmonary disease

Marilyn L. Moy, MD, MSc;[1–3*] John J. Reilly, MD;[3] Andrew L. Ries, MD, MPH;[4] Zab Mosenifar, MD;[5] Robert M. Kaplan, PhD;[6] Robert Lew, PhD;[7] Eric Garshick, MD, MOH;[2,8] for the National Emphysema Treatment Trial Research Group[†]

Table 2.
Univariate models* of exercise capacity, dyspnea, and lung function as determinants of health-related quality of life.

Variable	MOS SF-36 PCS Score†		MOS SF-36 MCS Score†		SGRQ-TS‡	
	Unadjusted Coefficient (95% CI)	*p*-Value	Unadjusted Coefficient (95% CI)	*p*-Value	Unadjusted Coefficient (95% CI)	*p*-Value
6MWT Distance	0.02 (0.01 to 0.02)	<0.001	0.02 (0.01 to 0.02)	<0.001	–0.04 (–0.05 to –0.04)	<0.001
Maximal CPET Workload	0.08 (0.06 to 0.09)	<0.001	0.08 (0.05 to 0.10)	<0.001	–0.18 (–0.21 to –0.15)	<0.001
UCSD SOBQ Total Score	–0.18 (–0.19 to –0.16)	<0.001	–0.19 (–0.22 to –0.17)	<0.001	0.46 (0.44 to 0.48)	<0.001
6MWT Borg	–0.75 (–0.92 to –0.58)	<0.001	–0.52 (–0.76 to –0.27)	<0.001	1.7 (1.4 to 2.0)	<0.001
CPET Borg	–0.47 (–0.63 to –0.31)	<0.001	–0.33 (–0.56 to –0.10)	0.0045	1.1 (0.80 to 1.4)	<0.001
FEV_1 % Predicted, After BD	0.14 (0.08 to 0.19)	<0.001	0.02 (–0.06 to 0.10)	NS	–0.33 (–0.42 to –0.23)	<0.001
RV/TLC Ratio, After BD	–9.5 (–14 to –5.1)	<0.001	–11 (–18 to –4.9)	<0.001	21 (13 to 29)	<0.001
DLCO, % Predicted	0.06 (0.02 to 0.09)	0.002	0.07 (0.02 to 0.12)	0.01	–0.16 (–0.22 to –0.09)	<0.001

Variable	MOS SF-36 PCS Score†		MOS SF-36 MCS Score†		SGRQ-TS‡	
	Unadjusted Coefficient (95% CI)	*p*-Value	Unadjusted Coefficient (95% CI)	*p*-Value	Unadjusted Coefficient (95% CI)	*p*-Value
Age	0.17 (0.12 to 0.23)	<0.001	0.13 (0.05 to 0.21)	0.002	–0.45 (–0.55 to –0.35)	<0.001
Current Oral Corticosteroid Use (ref = no use)	–2.0 (–2.7 to –1.2)	<0.001	–1.4 (–2.5 to –0.36)	0.009	5.2 (3.8 to 6.5)	<0.001
Alcohol Use (ref = never use)	2.1 (1.3 to 2.8)	<0.001	1.8 (0.74 to 2.8)	<0.001	–4.0 (–5.3 to –2.7)	<0.001
Disabled (ref = nondisabled)	–3.00 (–3.75 to –2.25)	<0.001	–1.8 (–2.9 to –0.74)	0.001	6.8 (5.4 to 8.1)	<0.001
Daytime Sleepiness (ref = never sleepy during day)	–1.1 (–1.8 to –0.40)	<0.001	–3.3 (–4.3 to –2.3)	<0.001	4.0 (2.7 to 5.2)	<0.001
Antidepressant Use (ref = no use)	–1.0 (–1.9 to –0.06)	0.04	–4.6 (–6.0 to –3.3)	<0.001	4.8 (3.2 to 6.5)	<0.001
Oxygen Use (ref = no use)	–1.6 (–2.4 to –0.78)	<0.001	–1.3 (–2.4 to –0.072)	0.04	3.2 (1.8 to 4.7)	<0.001
Beck Total Score	–0.22 (–0.28 to –0.17)	<0.001	–0.97 (–1.04 to –0.90)	<0.001	1.01 (0.92 to 1.1)	<0.001
BMI (ref = BMI 18–25, *n* = 836)						
BMI <18 (Underweight, *n* = 61)	–1.8 (–3.8 to 0.05)	0.06	–2.3 (–5.1 to 0.39)	0.09	4.2 (0.80 to 7.55)	0.02
BMI 25–30 (Overweight, *n* = 547)	0.02 (–0.77 to 0.81)	NS	1.1 (–0.011 to 2.2)	0.05	–0.14 (–1.5 to 1.3)	NS
BMI >30 (Obese, *n* = 177)	–1.7 (–2.9 to –0.55)	0.004	–0.91 (–2.6 to 0.79)	NS	2.8 (0.67 to 4.9)	0.01

Indicadores de EPOC terminal

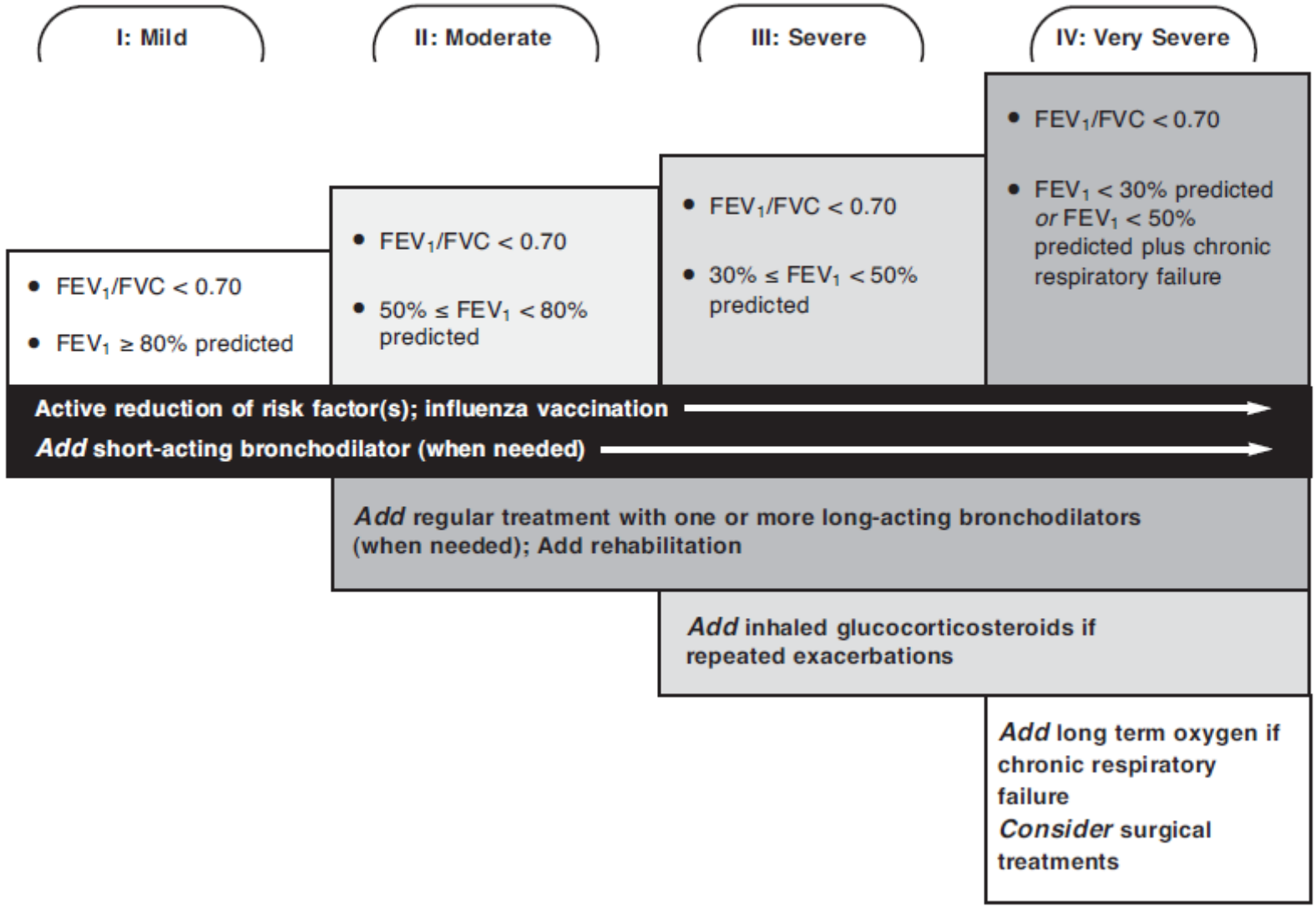
- Aislamiento social
- Depresión
- Ansiedad
- Mala calidad de vida
- Disnea intolerable
- Admisiones frecuentes a hospital
- Fatiga
- Perdida de interés por aficiones habituales
- Perdida de peso
- Baja autoestima
- Oxígeno terapia permanente
- FEV1 <30

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Crockett, et al. The impact of anxiety depresion and living alone in chronic obstructive pulmonary disease. Quality of life research 2002,11:309-316.
Mengistu Abbaw. Health and Quality of life outcomes. 2007; http://www.hqlo.com/content/5/1/17

Figure 7. Therapy at Each Stage of COPD

Postbronchodilator FEV_1 is recommended for the diagnosis and assessment of severity of COPD.



Clinical Rehabilitation 2010; **24**: 122–136

An integrated programme after pulmonary rehabilitation in patients with chronic obstructive pulmonary disease: effect on emotional and functional dimensions of quality of life

G Moullec and **G Ninot** University of Montpellier 1, EA4206 Addictive, Performance and Health Behaviors, Montpellier, France

Received 4th May 2009; returned for revisions 24th May 2009; revised manuscript accepted 22nd July 2009.

Variables:

- SGRQ
- Brief-WHOQLQ
- Secundarios: cambios en tolerancia al ejercicio

6 MWT and cicle exercise.



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Table 3 Changes over the follow-up period in functional and emotional quality of life scor

Variable	Usual aftercare ($n=16$)[a]			Integrated health care ($n=11$)[a]		
	Discharge	6 months	1 year	Discharge	6 months	1 years
Functional dimension of QoL						
SGRQ score (0–100)						
Symptoms	61.5 (21.2)*	64.5 (15.7)	65.3 (17.4)	59.0 (17.7)	56.2 (17.6)*	45.5 (8.6)*,†,‡
Activity	63.5 (17.5)*	67.3 (18.7)	73.7 (12.9)†	62.3 (18.9)	46.3 (22.1)*,†	46.2 (23.6)*,†
WHOQOL-brief score (4–26)						
Physical	10.5 (2.4)	10.4 (2.8)	9.4 (2.2)	12.4 (2.6)	13.5 (2.0)*	13.4 (1.9)*
VAS score (0–10)						
Physical condition	4.1 (2.6)	4.2 (2.5)	3.2 (2.8)	4.2 (2.6)	6.4 (2.0)*,†	6.6 (2.1)*,†
Respiratory control	4.9 (2.8)	4.2 (2.8)	3.8 (2.7)	6.4 (2.3)	6.4 (2.2)	6.7 (2.4)
Physical activity	4.0 (2.4)	4.3 (2.8)	4.1 (3.2)	6.1 (2.4)	7.2 (2.1)	7.1 (1.1)
Sleep	5.4 (2.9)	5.6 (2.6)	4.5 (2.8)	6.4 (2.4)	6.9 (2.7)	6.8 (2.0)
Fatigue	5.7 (2.5)	5.4 (3.2)	4.9 (3.0)	4.6 (2.9)	4.8 (2.4)	5.6 (2.7)
Dyspnea	2.7 (2.3)	3.5 (3.5)	4.0 (3.0)	1.7 (1.0)	2.6 (1.5)	1.3 (1.2)‡
Emotional dimension of QoL						
SGRQ score (0–100)						
Impact	34.7 (14.4)*	40.6 (20.3)†	50.2 (14.1)†	29.6 (12.8)	19.6 (10.7)*,†	16.0 (9.3)*,†

Table 3. Continued

Variable	Usual aftercare ($n=16$)[a]			Integrated health care ($n=11$)[a]		
	Discharge	6 months	1 year	Discharge	6 months	1 years
WHOQOL-brief score (4–26)						
Psychological	13.2 (2.0)	13.7 (1.7)	12.6 (2.5)	14.4 (1.9)	15.5 (2.3)	15.2 (2.1)
Social	14.8 (1.4)	14.1 (2.3)	14.6 (3.4)	14.8 (2.5)	15.0 (2.2)	14.3 (2.5)
Environmental	13.6 (1.3)	13.5 (1.9)	13.0 (1.5)	14.6 (1.9)	15.7 (1.9)	15.4 (1.4)
General QoL	12.3 (2.7)	12.0 (4.2)	11.7 (4.0)	13.1 (3.1)	15.6 (2.2)	15.3 (2.4)
Health satisfaction	10.7 (3.9)	10.7 (3.1)	9.7 (4.0)	11.6 (4.2)	13.1 (3.1)	12.5 (3.8)
Exercise capacity						
Six-minute walking distance, m	473.4 (81.9)*	435.8 (78.9)†	436.3 (82.1)†	471.3 (89.1)	508.4 (68.9)*	510.6 (80.2)†
Exercise dyspnoea score (0–10)	4.8 (2.4)	4.9 (2.0)	5.4 (2.2)	4.9 (2.3)	5.5 (2.0)	6.3 (2.2)
Peak work rate, W	81.4 (28.5)	69.9 (26.8)†	75.3 (23.3)	78.3 (36.1)	86.5 (44.8)*	86.1 (41.3)*

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Effects of 3-week Outpatient Pulmonary Rehabilitation on Exercise Capacity, Dyspnea, and Quality of Life in COPD

Andreas von Leupoldt · Erika Hahn · Karin Taube · Stephan Schubert-Heukeshoven · Helgo Magnussen · Bernhard Dahme

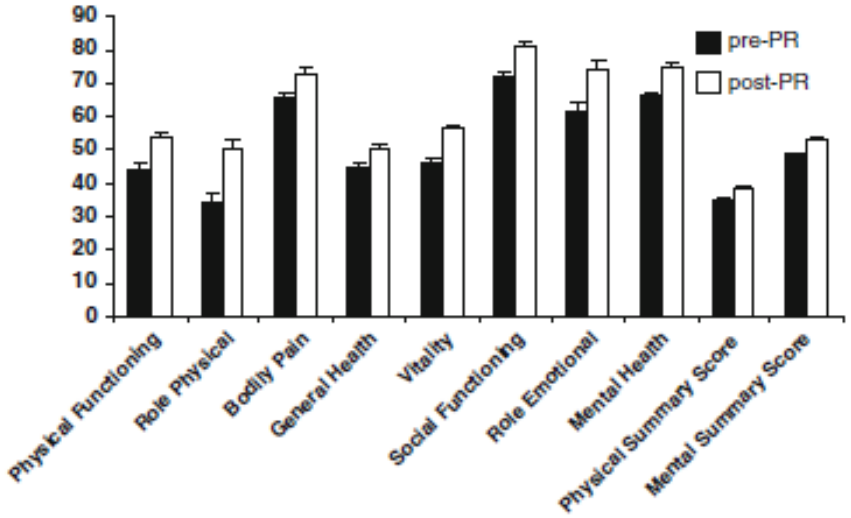


Fig. 1 The means (± SE) in the physical and mental summary scores and for the ratings in all subscales of the SF-36 show increased HRQL after PR (white bars) when compared to the start of the PR (black bars) ($p < 0.001$)

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Lung (2008) 186:387–391

Bromuro de Tiotropio

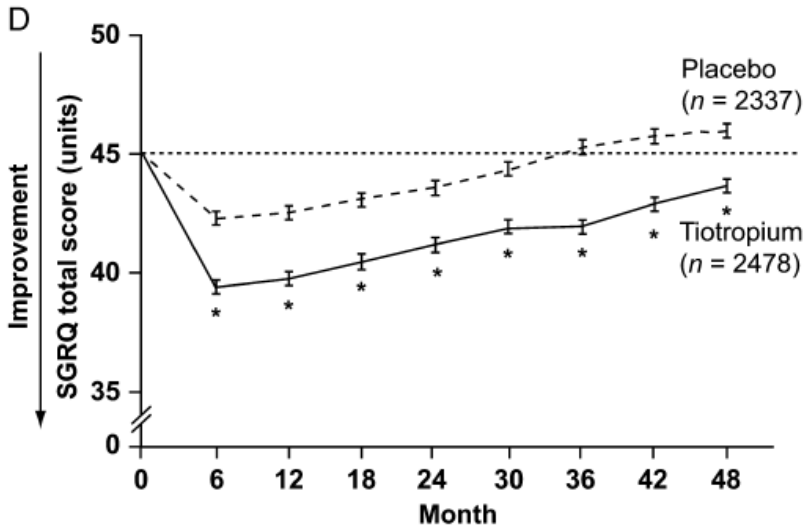
•SGRQ score total: **placebo** vs triatropio (49 % vs 30% p= <0.05).

•Mejoría en SGRQ, un total -3.3 p<0.05 e impacta en el score (p=0.001) mejora mas de su basal con tiotropium que con **ipratropio** a 1 año.

•

•Tiotropium vs ipatropium a 12 meses mejoría en SGRQ (52% vs 35% p=0.001).

•Base con esteroides orales: mejoría en score SGRQ con tiotropio que con **salmeterol.** Comparados con placebo (51% vs 40%)



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Table 3 Summary of results from recent studies on ICS/LABA + tiotropium combinations

References	Study size (N)	Study duration	COPD severity	ICS/LABA + TIO (or any medication) vs. comparator at study end: FEV_1	Severe exacerbations (% reduction)	Symptom control
Any COPD medication + tiotropium (18 µg once daily) vs. PBO						
Niewoehner et al. (77)	1829 (99% men)	6 month	Moderate to severe	Increase in FEV_1‡	−19% vs. PBO*	–
Tashkin et al. (8)	5993	4 years	Moderate to severe	Rate of decline: ns	−14% Leading to hospitalisation‡	SGRQ total score +2.7‡
ICS/LABA (salmeterol/fluticasone or budesonide/formoterol) + tiotropium vs. ICS/LABA						
Perng et al. (11)	46	1 month with TIO	Severe	Increase in FEV_1‡	–	SGRQ total score +6.5‡
Salmeterol/fluticasone + tiotropium vs. tiotropium + PBO						
Aaron et al. (10)	449	1 year	Moderate to severe	+0.027 vs. TIO + PBO*	−2.8% vs. TIO + PBO (ns)	SGRQ total score +4.1 vs. TIO + PBO*

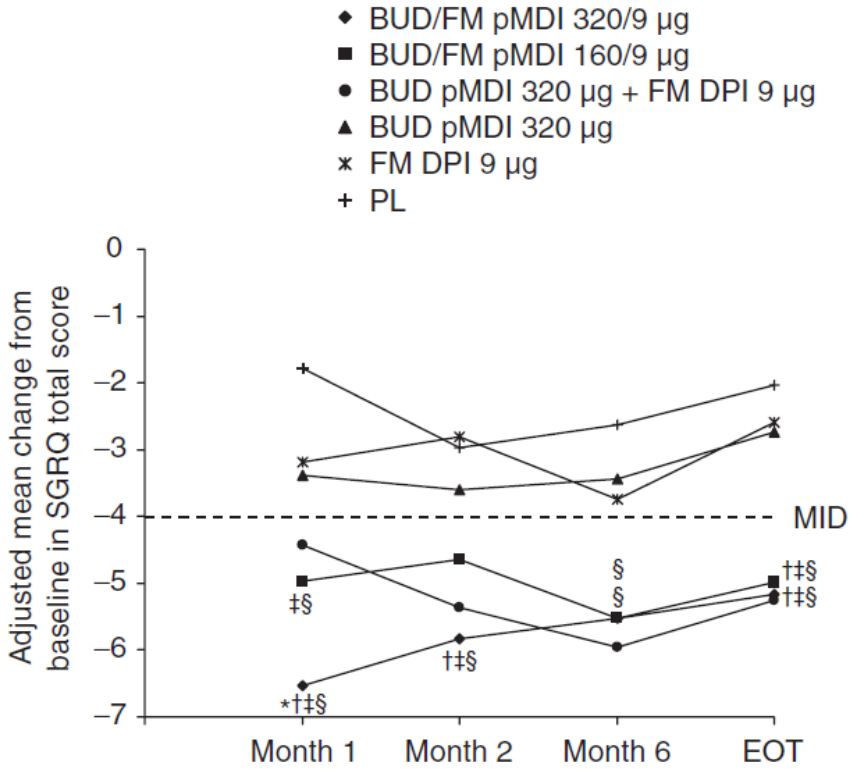
*$p < 0.05$; †$p < 0.01$; ‡$p < 0.001$. COPD, chronic obstructive pulmonary disease; FEV_1, forced expiratory volume in 1 s; ICS, inhaled corticosteroid; LABA, long-acting β_2-agonist; ns, non-significant; PBO, placebo; TIO, tiotropium; SGRQ, St George's respiratory questionnaire.

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Efficacy and Safety of Budesonide and Formoterol in One Pressurized Metered-Dose Inhaler in Patients with Moderate to Very Severe Chronic Obstructive Pulmonary Disease

Results of a 6-Month Randomized Clinical Trial

Donald P. Tashkin,[1] Stephen I. Rennard,[2] Paula Martin,[3] Sulabha Ramachandran,[3] Ubaldo J. Martin,[3] Philip E. Silkoff[3] and Mitchell Goldman[3]



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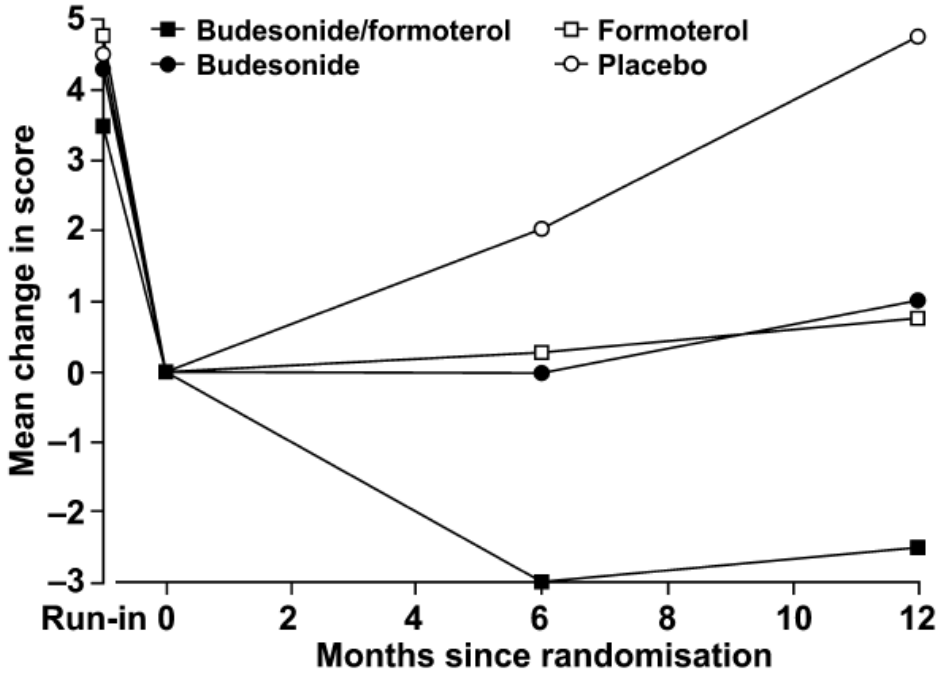
Drugs 2008,68(14): 1975-2000

REVIEW ARTICLE

THE INTERNATIONAL JOURNAL OF CLINICAL PRACTICE

Optimising treatment for COPD – new strategies for combination therapy

T. Welte



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Int J Clin Pract, 2009;63(8):1133-1149

Long-term Effect of the β_2-Receptor Agonist Procaterol on Daily Life Performance and Exercise Capacity in Patients with Stable Chronic Obstructive Pulmonary Disease

Table 3: Changes of exercise capacity, health-related quality of life and activities of daily living.

Valuables	Baseline	12 weeks	24 weeks	52 weeks
Procaterol				
6MWT, months	357 ± 45.6	414 ± 54.9**	412 ± 48.3**	391 ± 47.3*
Borg Scale	1.11± 0.78	0.67± 0.58**	0.70 ± 0.53**	0.78 ± 0.61*
Dyspnea	17.9 ± 3.5	27.1 ± 5.4**	25.3 ± 4.5**	24.2 ± 4.1**
Fatigue	16.6 ± 3.7	21.5 ± 4.4**	20.6 ± 3.5*	18.9 ± 4.0*
Emotional function	34.3 ± 6.9	38.4 ± 8.3*	37.9 ± 8.2*	35.6 ± 7.6
Mastery	19.1 ± 2.4	21.4 ± 2.9*	21.2 ± 2.3*	20.6 ± 2.3
Total score	87.4 ± 14.9	108.7 ± 17.9**	104.2 ± 17.1**	99.8 ± 16.5*
LCADL	7.8 ± 3.3	3.7 ± 1.9**	3.9 ± 2.1*	3.9 ± 2.2*
Oxitropium				
6MWT, months	352 ± 50.1	374 ± 60.5	372 ± 61.5	353 ± 58.7
Borg Scale	1.03 ± 0.78	0.94 ± 0.73	0.99 ± 0.81	1.01 ± 0.82
Dyspnea	17.8 ± 4.7	18.9 ± 5.9	18.3 ± 5.2	18.1 ± 4.7
Fatigue	17.3 ± 3.8	17.9 ± 3.6	17.7 ± 3.4	16.8 ± 3.0
Emotional function	34.1 ± 8.1	36.8 ± 8.4	35.4 ± 8.0	34.2 ± 7.9
Mastery	19.8 ± 2.9	20.2 ± 4.8	19.8 ± 4.4	19.3 ± 3.4
Total score	89.4 ± 12.8	93.8 ± 14.3	90.3 ± 15.2	90.1 ± 14.8
LCADL	7.7 ± 3.6	7.2 ± 4.1	7.5 ± 3.8	7.6 ± 4.1

LCADL: London Chest Activities of daily Living.
Values given as mean ± SD.
*P<0.05 vs baseline, **P<0.01 vs baseline.



Arzneimittel-Forschung (Drug Research) 2008;58(1):24–28

Table 2 Summary of results from studies on ICS/LABA combinations

References	Study size	Study duration	COPD severity	ICS/LABA dose	ICS/LABA vs. comparator at study end				
					FEV_1	Rate of severe exacerbations	Symptoms	Health-related quality of life	Other notes
Budesonide/formoterol									
Szafranski et al. (16)	812	12 months	Moderate to severe	160/4.5 µg 2 inhalation bid	+15% vs. PBO‡ +9% vs. BUD‡	−24% vs. PBO* −23% vs. FORM*	*Total symptom score* −0.21 vs. PBO‡ −0.13 vs. BUD* *Breathlessness* −0.36 vs. PBO‡	*SGRQ total score* −3.9 vs. PBO†	–
Calverley et al. (71)	1022	12 months	Moderate to severe	320/9 µg bid	+14% vs. PBO‡ +5% vs. FORM† +11% vs. BUD‡	−24% vs. PBO* −26% vs. FORM*	*Total score* −0.56 vs. PBO† −0.26 vs. BUD (ns) −0.02 vs. FORM (ns) *Breathlessness* −0.21 vs. PBO‡ −0.12 vs. BUD*	*SGRQ total score* Significantly improved vs. BUD†, FORM* and PBO‡ −7.5 vs. PBO‡	–
Bathoorn et al. (73)	45	14 days	Moderate to mild	320/9 µg 4 times daily	+125 ml vs. PBO (ns)	–	Reduced total symptom score vs. PBO*	–	Sputum eosinophils −57% vs. +24% PBO*
Salmeterol/fluticasone									
Calverley et al. (15)	1465	12 months	Moderate to severe	50/500 µg bid	+133 ml vs. PBO§ +73 ml vs. S§ +95 ml vs. F§	−25% vs. PBO§	*Breathlessness* −0.19 vs. PBO‡ −0.12 vs. S† −0.11 vs. F* *Cough* −0.09 vs. PBO*	*SGRQ total score* −2.2 vs. PBO‡ −1.4 vs. F*	Reliever use Significantly reduced vs. PBO, F and S‡ Night-time awakenings Reduced vs. PBO, S*
Calverley et al. (43)	6112	3 years	Moderate to severe	50/500 µg bid	–	−25% vs. PBO‡ −14% vs. S† −9% vs. F†	–	*SGRQ total score* −3.1 vs. PBO‡ −2.2 vs. S‡ −1.2 vs. F†	Mortality −17.5% vs. PBO (p = 0.052)
Mahler et al. (21)	691	24 weeks	Moderate to severe	50/500 µg bid	+159 ml vs. PBO* +54 ml vs. F* +67 ml vs. S*	–	*Dyspnoea index score* +1.7 vs. PBO‡ +1.2 vs. S‡ +0.8 vs. F*	CRDQ +5.0 vs. PBO† +6.2 vs. F*	Reliever use Improvement vs. PBO, F* Night-time awakenings Improvement vs. PBO*

*$p < 0.05$; †$p < 0.01$; ‡$p < 0.001$; §$p < 0.0001$. bid, twice daily; BUD, budesonide; COPD, chronic obstructive pulmonary disease; CRDQ, chronic respiratory disease questionnaire; F, fluticasone; FEV_1, forced expiratory volume in 1 s; FORM, formoterol; ICS, inhaled corticosteroid; LABA, long-acting β_2-agonist; ns, non-significant; PBO, placebo; S, salmeterol; SGRQ, St George's respiratory questionnaire.

Int J Clin Pract, 2009;63(8):1133-1149

Long term home Non Invasive Mechanical Ventilation in COPD

- Corrección nocturna de hipoventilación y disminución PaCO2.
- La mejoría continua después de interrumpir la ventilación debido a la mejoría temporal en sensibilidad de CO2 en los centros respiratorios. Corrección del gradiente A-a mientras VMNIPP y aumento en el patrón respiratorio espontáneo (mejoría en compliansa de la pared, mejoría en función muscular y disminución de consumo de O2 por disminución en el trabajo respiratorio.
- Mismos resultados con uso de VMNIPP /8 hrs en el día.
- Indicado a pacientes con COPD severo y condición respiratoria inestable, fluctuaciónes de hipercapnia, durante o después de un episodio de FRA, evitar la necesidad de traqueotomía.

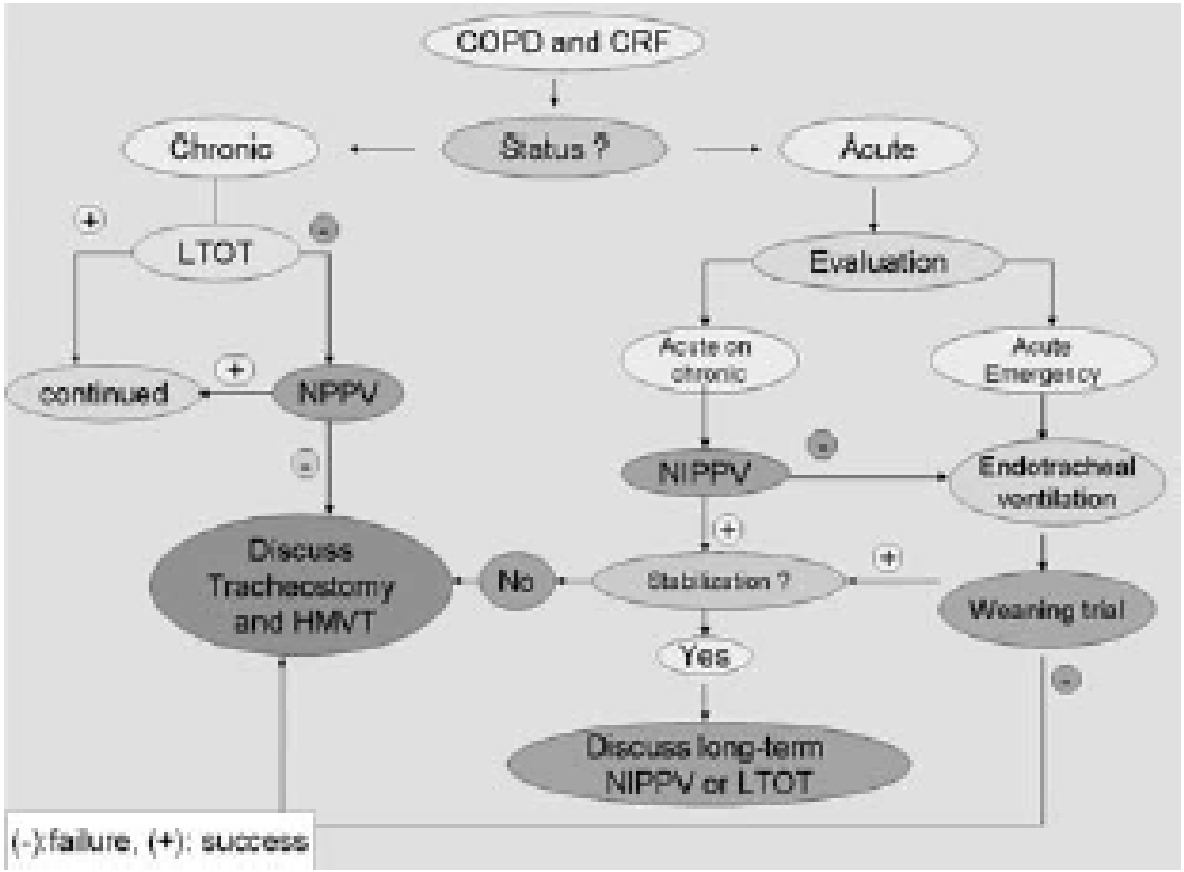
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Antoniadis A., et al. *Pneumon , Supplement 2;2: 103-111*

Indicaciones clínicas para uso de VMNIPP

Clinical indicators for institution of nasal positive pressure ventilation in patients with COPD	
Disease documentation Establish and document an appropriate diagnosis	History Physical examination Results of diagnostic tests
The most common obstructive lung diseases would include	Chronic Bronchitis Emphysema Bronchiectasis Cystic Fibrosis
Assure optimal management of COPD	Bronchodilators Oxygen therapy when indicated
Optimal management of other underlying disorders	Multichannel sleep study to exclude associated OSAS if clinically indicated
Indications for usage	
symptoms	Fatigue, Dyspnoea, morning headache
Physiological criteria (one of the following)	$PaCO_2$ >= 55 mmHg $PaCO_2$ = 50-54 mmHg with nocturnal desaturation (SaO_2<= 88% for 5 continuous min while receiving oxygen therapy >= 2 l/min $PaCO_2$ = 50-54 mmHg with hospitalization related to recurrent episodes of hypercapnic respiratory failure (>=2 in a 12-month period)

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Sobrevida 10% a 10 años y disminución en hospitalizaciones así como mejoria en falla cardiaca derecha y gases arteriales (paO2), mejora calidad de vida.
(39-41
Estudios a 1 o 2 años mejoria en calidad de vida, en calidad de sueño, en días hospital (SGRQ), pero continuidad solo del 43-53%

Otras Intervenciones para reducir hospitalizaciones

Table 2 Characteristics of callers and non-callers

Characteristic	Non-callers (n = 340)	Callers (n = 118)
Age (years)	71 ± 8	69 ± 8*
Male (%)	57	61
Living alone (%)	21	11*
BMI (kg/m^2)	26 ± 6	25 ± 7
FEV_1 (L) (% predicted)	1.00 ± 0.42 (43 ± 17)	0.89 ± 0.42* (37 ± 17)*
6MWD (m)	378 ± 133	349 ± 127*
Home oxygen (%)	18	31*
IHD (%)	28	29
DM (%)	14	9
Home nebulizers (%)	64	75
Quality of life – SGRQ total (%)	56 ± 17	60 ± 15
HAD – anxiety score (a.u.)	8 ± 4	8 ± 4
Hospital admissions (previous year)	1.0 ± 1.6	1.0 ± 1.5

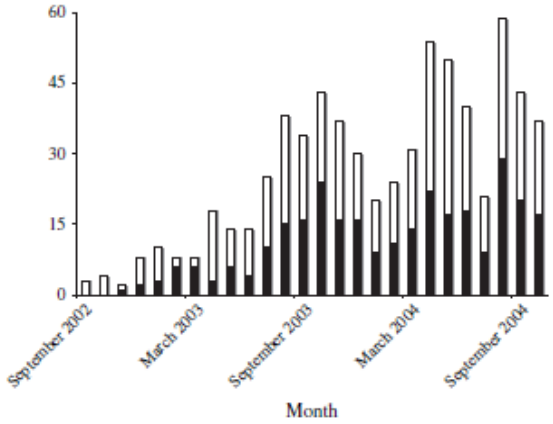


Table 3 Outcomes of calls to the hotline (n = 675)

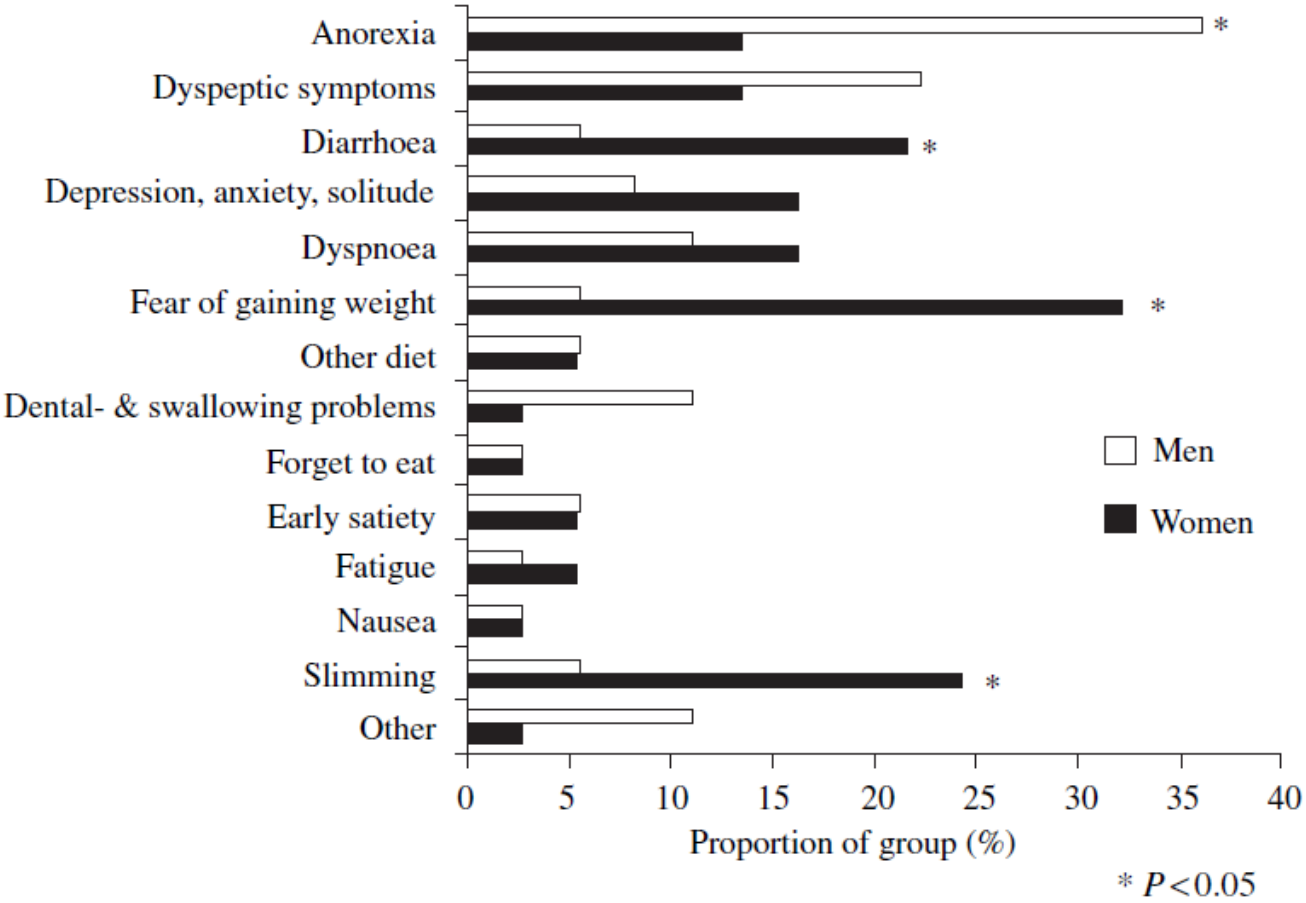
Outcome	n (%)
000 averted	78 (12)
000 called	58 (9)
Potential called 000	11 (2)
Action plan implemented	117 (17)
Planned admission	21 (3)
Non-urgent ambulance	1 (0)
Medical review	20 (3)
Medical advice provided (non-respiratory)	169 (25)
General advice provided	13 (2)
Outreach visit planned	41 (6)
Reassurance	145 (21)
Care planning	1 (0)

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Roberts, et al. Nurse-led 24 h hotline for patients with chronic obstructive pulmonary disease reduces hospital use and is safe.Int Med J,, 2008;38:334-340

Dietary problems in patients with severe chronic obstructive pulmonary disease

A. M. Grönberg,*† F. Slinde,† C.-P. Engström,* L. Hulthén† & S. Larsson*



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The British Dietetic Association Ltd 2005 *J Hum Nutr Dietet*, **18**, pp. 445–452

Mensajes para llevar a casa

- Evaluación multidisciplinaria.
- Continuar manejo establecido.
- Incluir tratamiento emocional, educación familiar, manejo de síntomas.

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Cuidados Paliativos en EPOC IV

- **Barreras:**

Paciente	Practicantes Generales
Pereza para discutir el final de su vida	Falta de confidencialidad
Falta de comunicación	Falta de tiempo
Ignora discutir el asunto	Poca certeza acerca del pronóstico en EPOC severo
Falta de conocimiento acerca del tipo de cuidados disponibles	Falta de educación al paciente acerca de EPOC terminal
Perdida de la esperanza	No esta en sus prioridades
	Falta de recursos y facilidades

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Mengistu Abebaw, et al. Palliative care provision for patients with chronic obstructive pulmonary disease. *Health and Quality of life Outcomes*,2007;5(17):