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CENTRO CONGRESSI PALAZZO DELLE STELLINE

UNIVERSITY OF GOTHENBURG

Nuovi farmaci in sviluppo per la BPCO

Leonardo M. Fabbri, MD, FERS

Professor of Respiratory and Internal Medicine, University of Modena and Reggio Emilia, (-2016)
Eminent Scholar of Respiratory and Internal Medicine, University of Ferrara
Visiting Professor of Respiratory and Internal Medicine, COPD Center, University of Gothenburg

NUOVI FARMACI IN SVILUPPO PER LA BPCO

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The changes in the definition and assessement of severity of COPD

The recent studies of efficacy and safety of triple therapy in a single inhaler is likely to introduce major changes in the pharmacologic management of COPD

Anti IL-5 Moa, new experimental agents

TREAT THE PATIENT WITH COPD NOT JUST COPD

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COPD Definition

Chronic Obstructive Pulmonary Disease (COPD) is a common, preventable and treatable disease that is characterized by **persistent respiratory symptoms and airflow limitation** that is due to **airway and/or alveolar abnormalities** usually caused by significant exposure to noxious particles or gases

COPD
DEFINITION OF COPD 2011-2018

2011

Chronic Obstructive Pulmonary Disease (COPD) is a common, preventable and treatable disease that is characterized by progressive **airflow limitation that is associated with and abnormal and excessive chronic airway and lung inflammation** caused by usually caused by significant exposure to cigarette smoking and noxious particles or gases

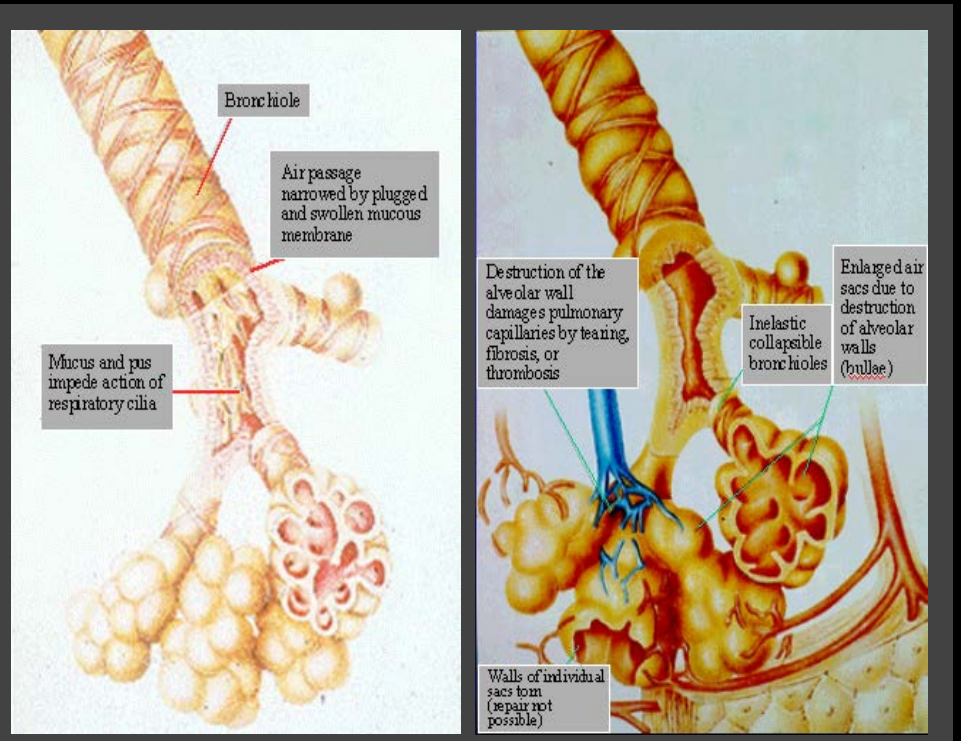
- The severity and progrosis of individual patients

2017

Chronic Obstructive Pulmonary Disease (COPD) is a common, preventable and treatable disease that is characterized by **persistent respiratory symptoms and airflow limitation** that is due to **airway and/or alveolar abnormalities usually** caused by significant exposure to noxious particles or gases

COPD

- **GOLD Definition:** the presence of airflow limitation that is not fully reversible and a history of exposure to a noxious agent / risk factor (cigarette smoke)
- **Airflow limitation**
  - Small airways
    - Remodeling, fibrosis
  - Alveoli: emphysema
    - Destruction and enlargement of mature Airspace distal to terminal bronchioles



Small Airway Obstruction

Emphysema

Global Strategy for Diagnosis, Management and Prevention of COPD

Diagnosis of COPD

SYMPTOMS

shortness of breath

chronic cough

sputum

EXPOSURE TO RISK FACTORS

tobacco

occupation

indoor/outdoor pollution

SPIROMETRY: Required to establish diagnosis

The NEW ENGLAND JOURNAL of MEDICINE

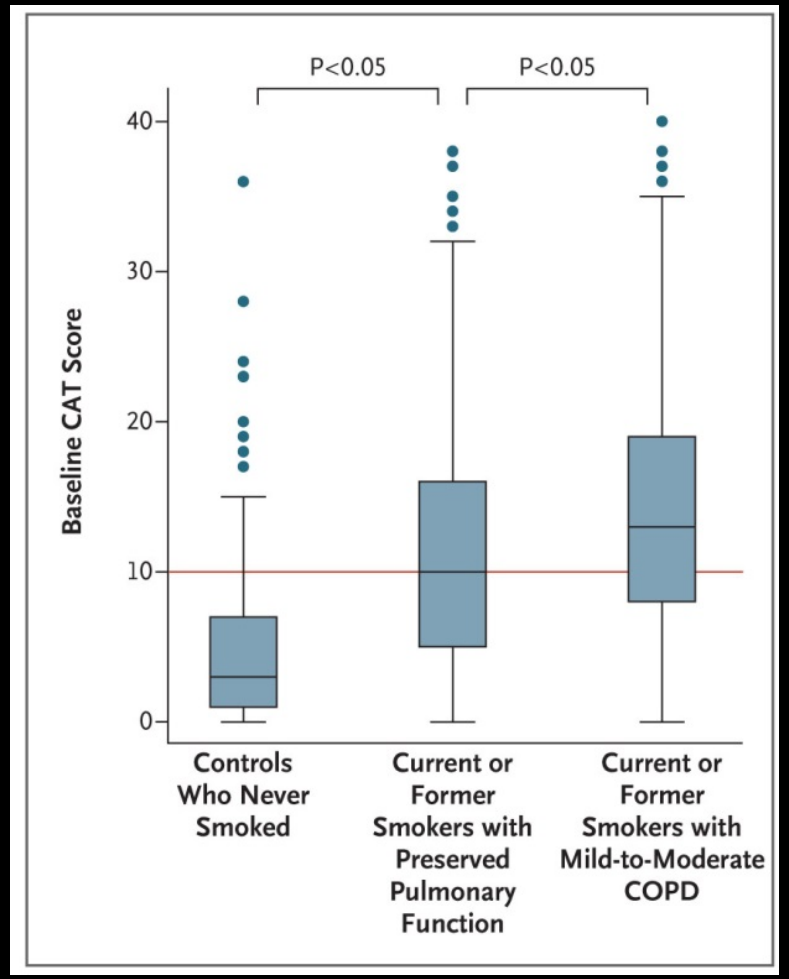
ORIGINAL ARTICLE

Clinical Significance of Symptoms in Smokers with Preserved Pulmonary Function

Prescott G. Woodruff, M.D., R. Graham Barr, M.D., Dr.P.H., Eugene Bleecker, M.D., Stephanie A. Christenson, M.D., David Couper, Ph.D., Jeffrey L. Curtis, M.D., Natalia A. Gouskova, Ph.D., Nadia N. Hansel, M.D., Eric A. Hoffman, Ph.D., Richard E. Kanner, M.D., Eric Kleerup, M.D., Stephen C. Lazarus, M.D., Fernando J. Martinez, M.D., Robert Paine, III, M.D., Stephen Rennard, M.D., Donald P. Tashkin, M.D., and MeiLan K. Han, M.D., for the SPIROMICS Research Group*

Woodruff PG et al. N Engl J Med 2016; 374:1811-21

SYMPTOMS (CAT≥10) ARE COMMON IN SMOKERS WITH PRESERVED PULMONARY FUNCTION



Woodruff PG et al. N Engl J Med 2016; 374:1811-21

INTERVENTIONAL THERAPY IN STABLE COPD

- Lung volume reduction surgery (LVRS) is a surgical procedure in which parts of the lungs are resected to reduce hyperinflation,261 making respiratory muscles more effective pressure generators by improving their mechanical efficiency.
- Due to the morbidity and mortality associated with LVRS, less invasive bronchoscopic approaches to lung reduction

Table 3.11. Interventional therapy in stable COPD
Lung volume reduction surgery
• Lung volume reduction surgery improves survival in severe emphysema patients with an upper-lobe emphysema and low post-rehabilitation exercise capacity **(Evidence A)**.
Bullectomy
• In selected patients bullectomy is associated with decreased dyspnea, improved lung function and exercise tolerance **(Evidence C)**.
Transplantation
• In appropriately selected patients with very severe COPD, lung transplantation has been shown to improve quality of life and functional capacity **(Evidence C)**.
Bronchoscopic interventions
• In select patients with advanced emphysema, bronchoscopic interventions reduces end-expiratory lung volume and improves exercise tolerance, health status and lung function at 6-12 months following treatment. Endobronchial valves **(Evidence B)**; Lung coils **(Evidence B)**.

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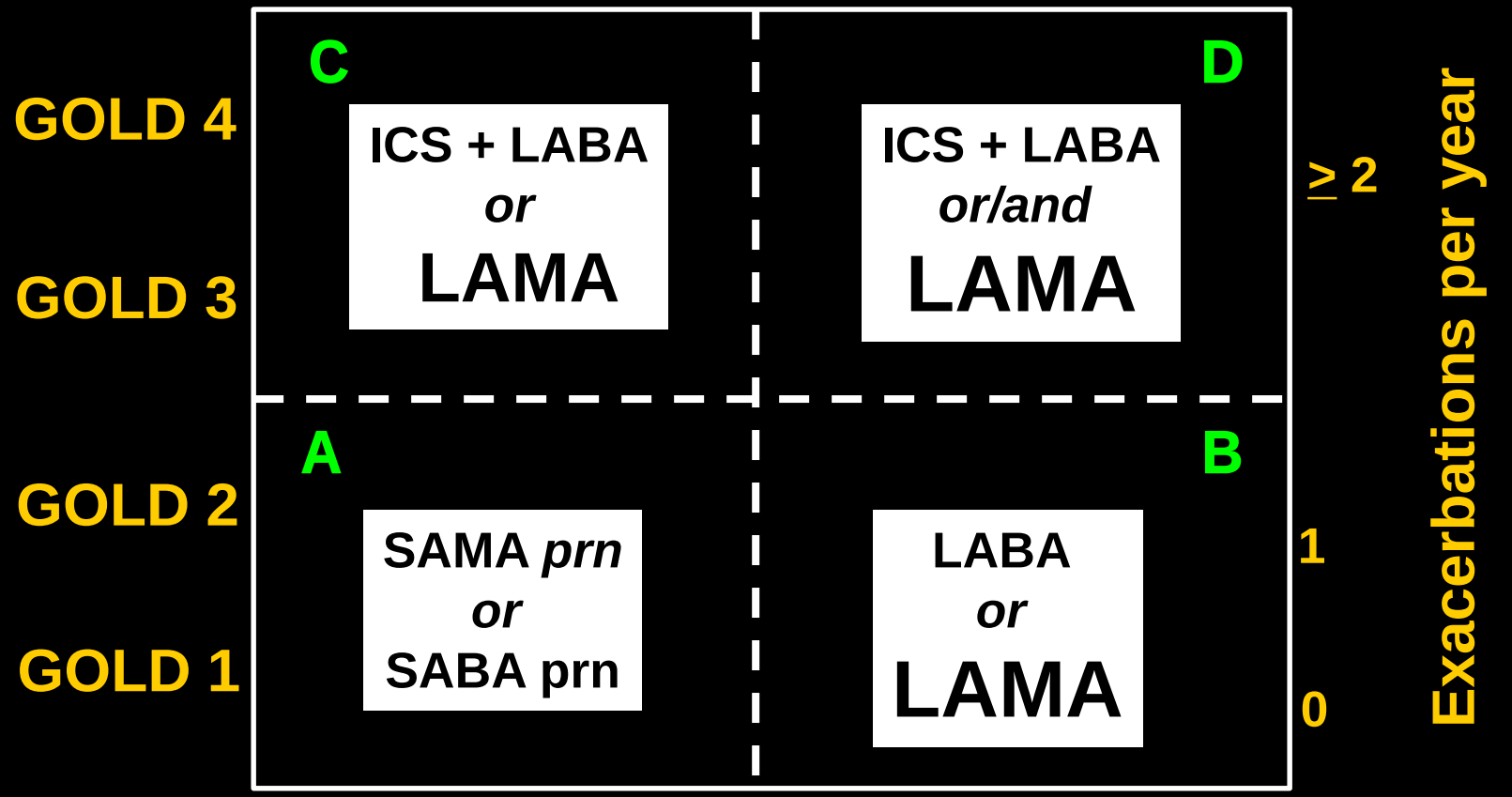
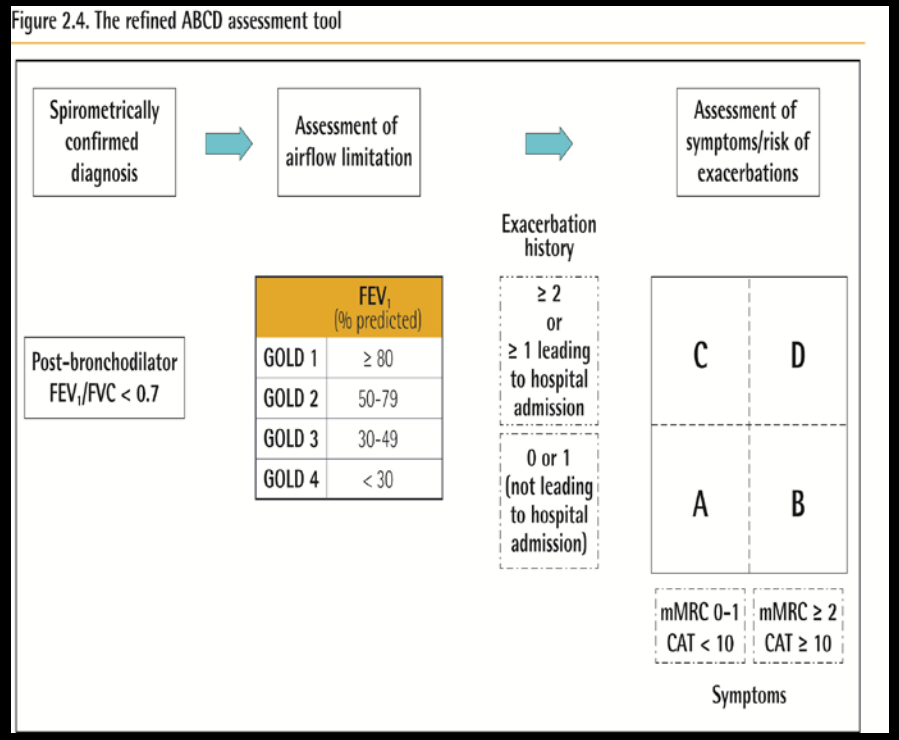
Anti IL-5 Moa, new experimental agents

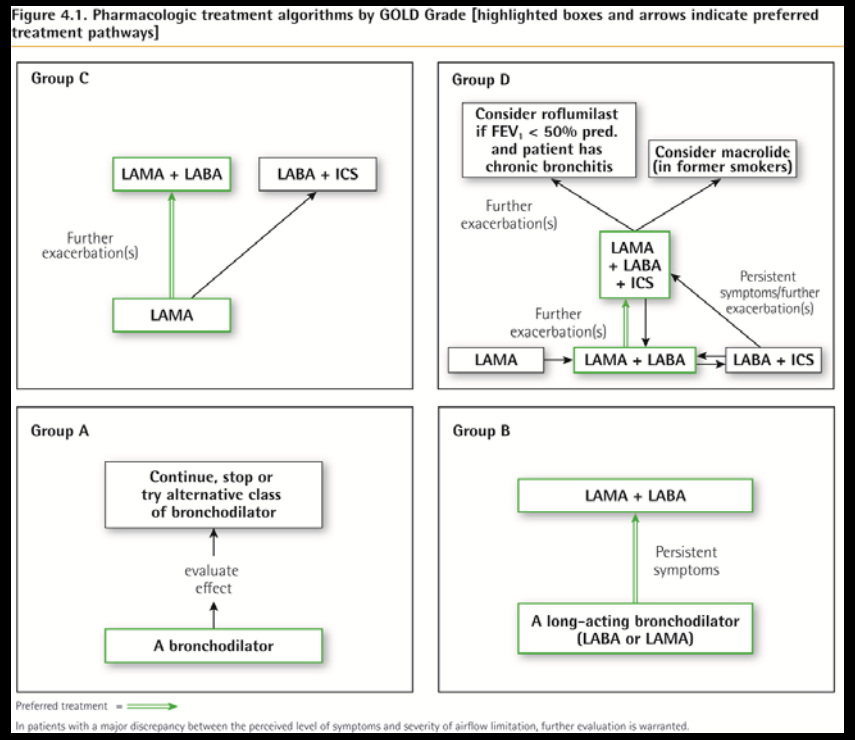
TREAT THE PATIENT WITH COPD NOT JUST COPD

Manage stable COPD: Pharmacologic therapy
FIRST CHOICE

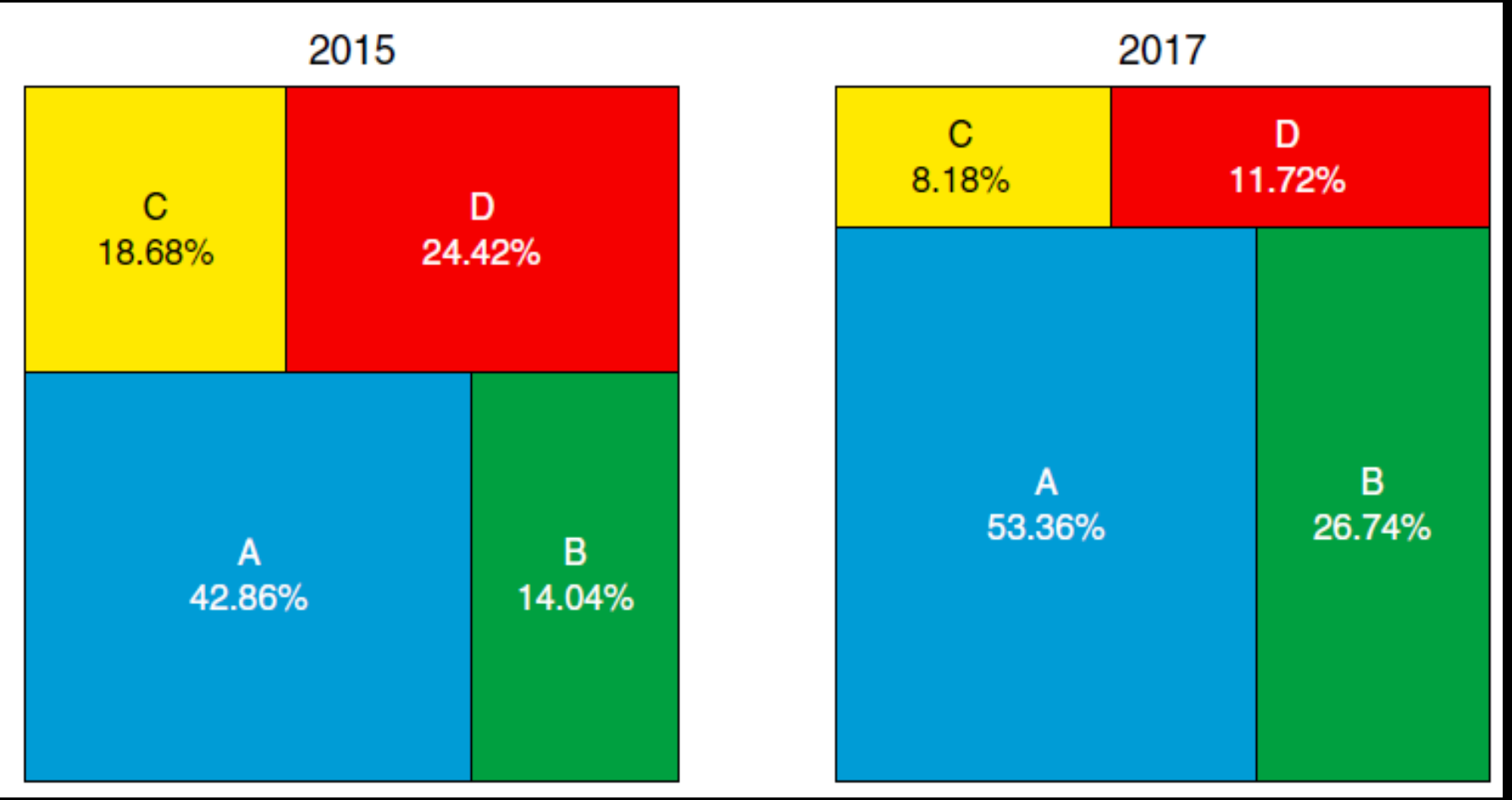


ABCD Assessment Tool





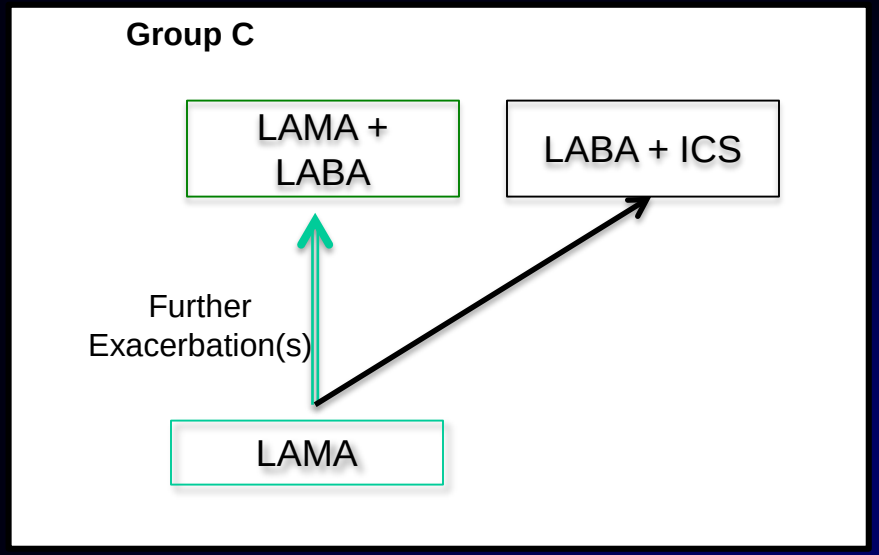
DISTRIBUTION OF THE SAME PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE IN THE DIFFERENT ABCD GLOBAL INITIATIVE FOR CHRONIC OBSTRUCTIVE LUNG DISEASE GRADING GROUPS USING THE 2011 VERSION VERSUS THE NEW 2017 VERSION

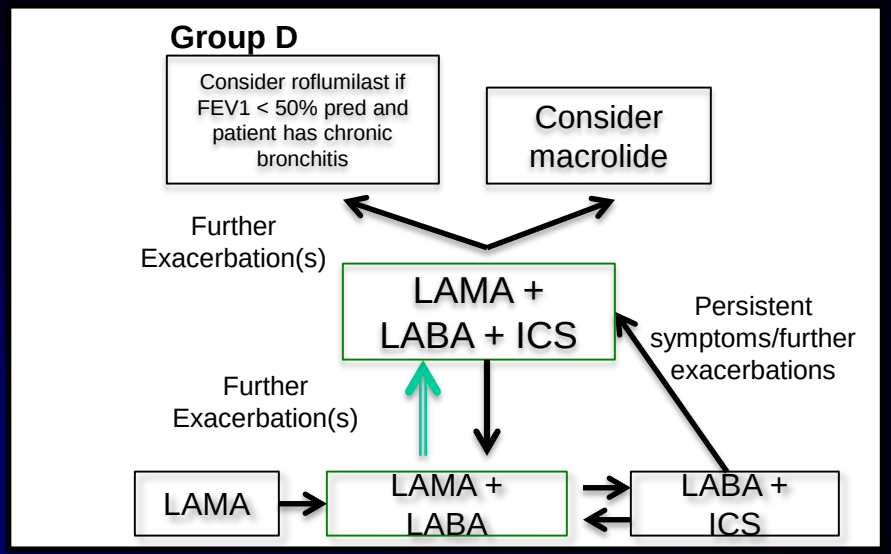


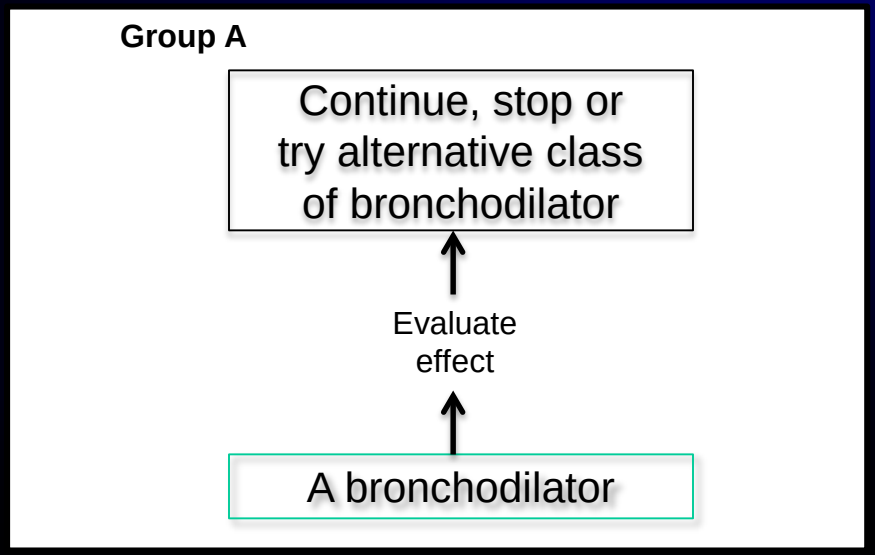
Cabrera López C et al., Am J Respir Crit Care Med. 2018 Feb 15;197(4):463-469

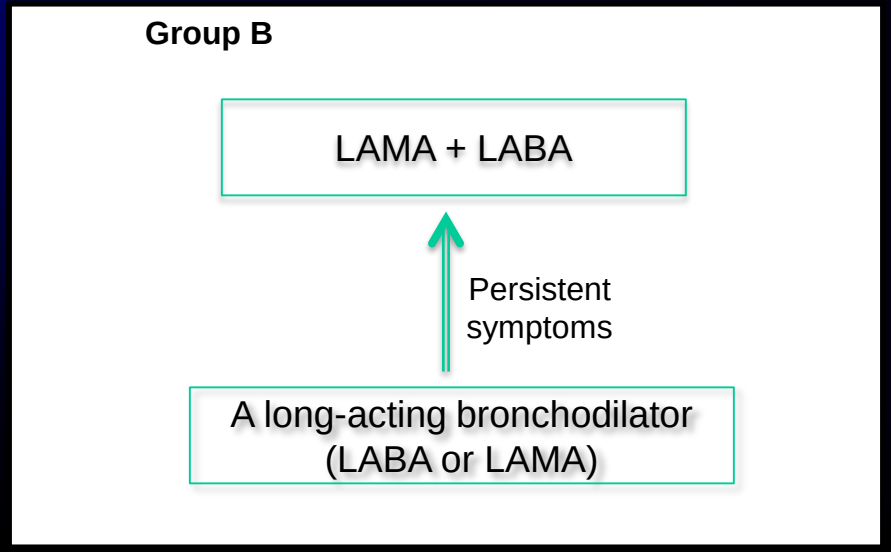
Manage stable COPD: Pharmacologic therapy

FIRST CHOICE (2017)





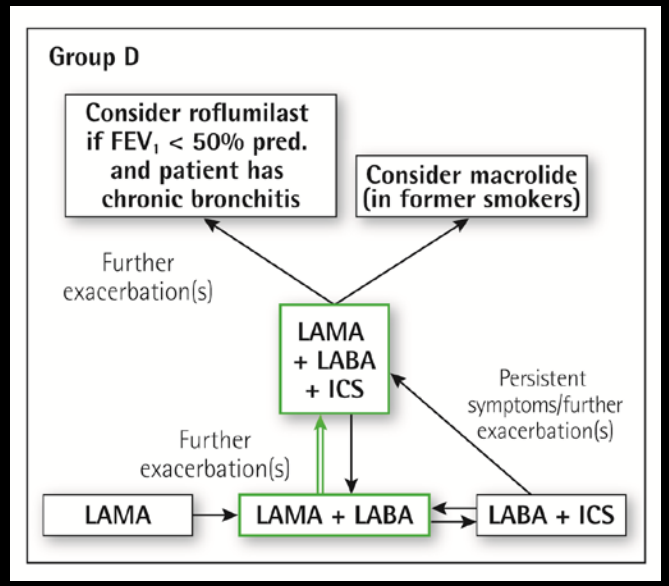




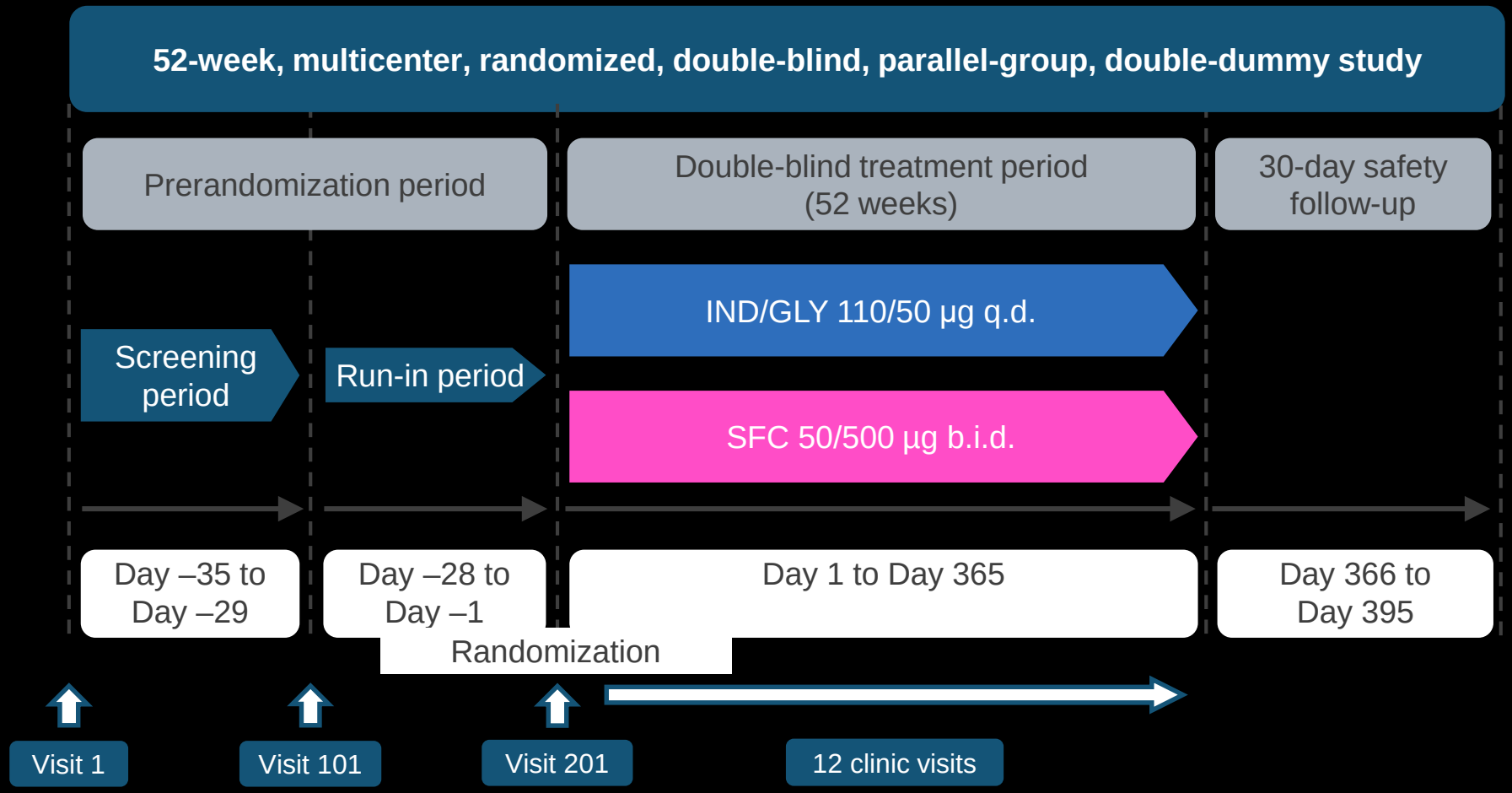
Pharmacologic treatment algorithms

Group D

- **We recommend starting therapy with a LABA/LAMA combination because:**
  - **In studies with patient reported outcomes as the primary endpoint LABA/LAMA combinations showed superior results compared to the single substances. If a single bronchodilator is chosen as initial treatment, a LAMA is preferred for exacerbation prevention based on comparison to LABAs (for details see GOLD 2017 Chapter 3).**
  - **A LABA/LAMA combination was superior to a LABA/ICS combination in preventing exacerbations and other patient reported outcomes in Group D patients (for details see GOLD 2017 Chapter 3).**
  - **Group D patients are at higher risk of developing pneumonia when receiving treatment with ICS.**

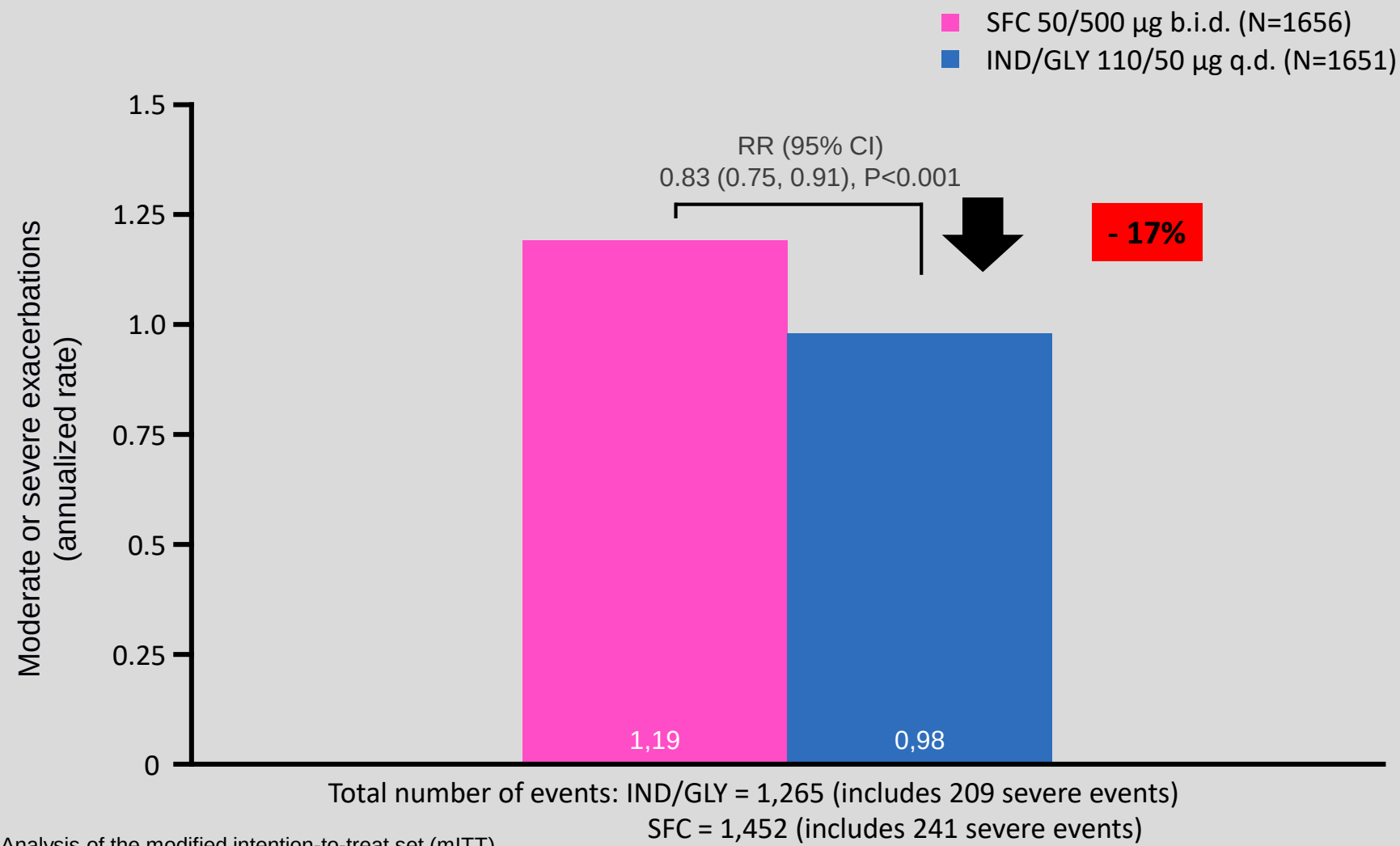


COMPARISON OF INDACATEROL/GLYCOPYRROMNIUM COMBINATION (110/50 µg) versus SALMETEROL/FLUTICASONE (50/500 µg) BID FOR THE ROW



Wedzicha JA, et al. N Engl J Med 2016 Jun 9;374(23):2222-34

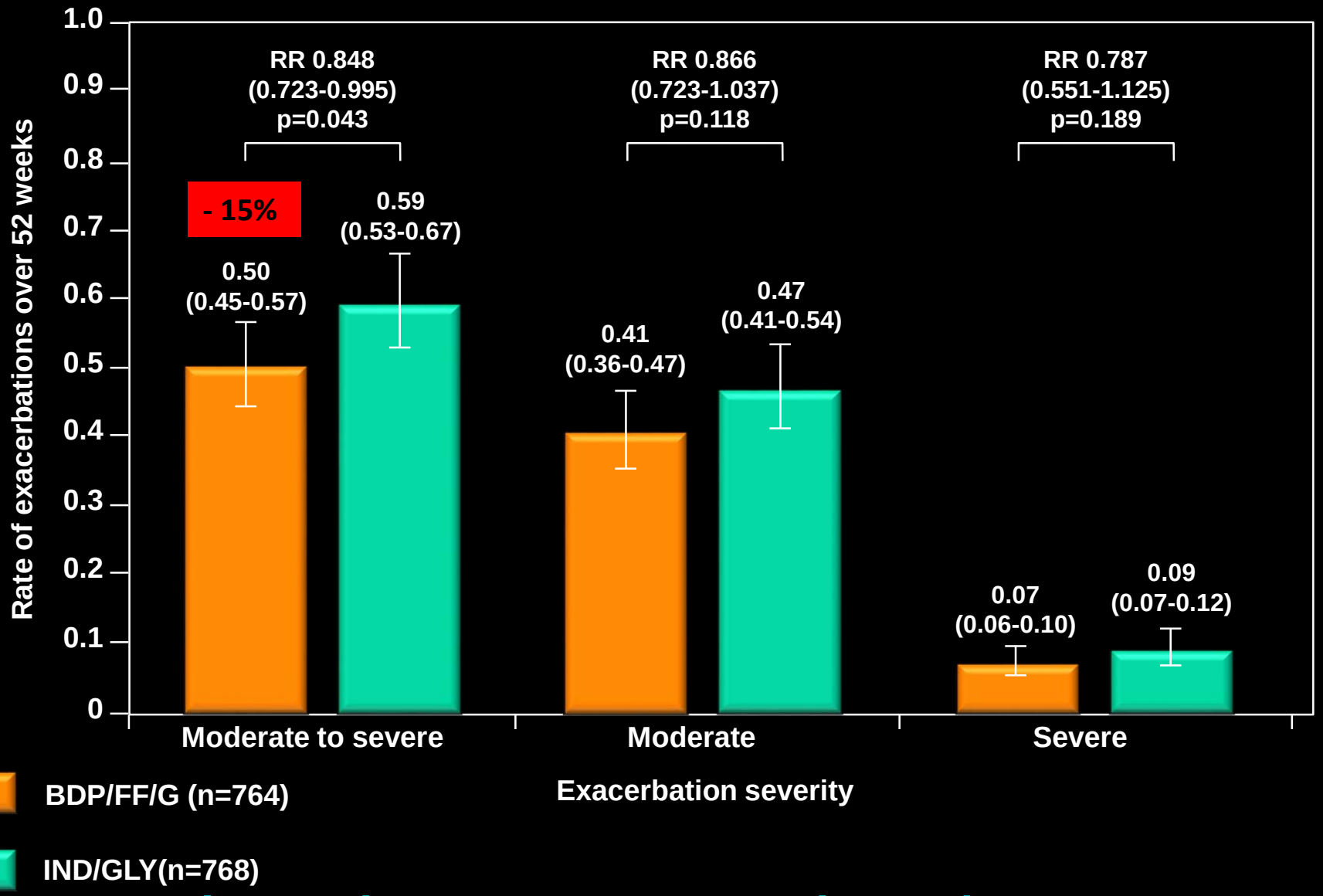
IND/GLY showed superiority in reducing the annual rate of moderate or severe exacerbations (healthcare utilization) versus SFC



Analysis of the modified intention-to-treat set (mITT)

1. Wedzicha JA, et al. N Engl J Med. Online May 15, 2016
2. Wedzicha JA, et al. N Engl J Med. Online May 15, 2016 Supplementary appendix

TRIPLE IN A SINGLE INHALER IS SUPERIOR TO LABA/LAMA IN REDUCING EXACERBATIONS IN D AND B COPD



Papi A et al. Lancet 2018 ; 391(10125): 1076-1084

ONCE-DAILY SINGLE-INHALER TRIPLE THERAPY VERSUS DUAL THERAPY IN COPD

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Once-Daily Single-Inhaler Triple versus Dual Therapy in Patients with COPD

David A. Lipson, M.D., Frank Barnhart, D.V.M., Noushin Brealey, M.D., Jean Brooks, M.Sc., Gerard J. Criner, M.D., Nicola C. Day, Ph.D., Mark T. Dransfield, M.D., David M.G. Halpin, M.D., MeiLan K. Han, M.D., C. Elaine Jones, Ph.D., Sally Kilbride, M.Sc., Peter Lange, M.D., David A. Lomas, M.D., Ph.D., Fernando J. Martinez, M.D., Dave Singh, M.D., Maggie Tabberer, M.Sc., Robert A. Wise, M.D., and Steven J. Pascoe, M.B., B.S., for the IMPACT Investigators

Lipson et al, New E J Med 18 April 2018

ONCE-DAILY SINGLE-INHALER TRIPLE THERAPY VERSUS DUAL THERAPY IN COPD

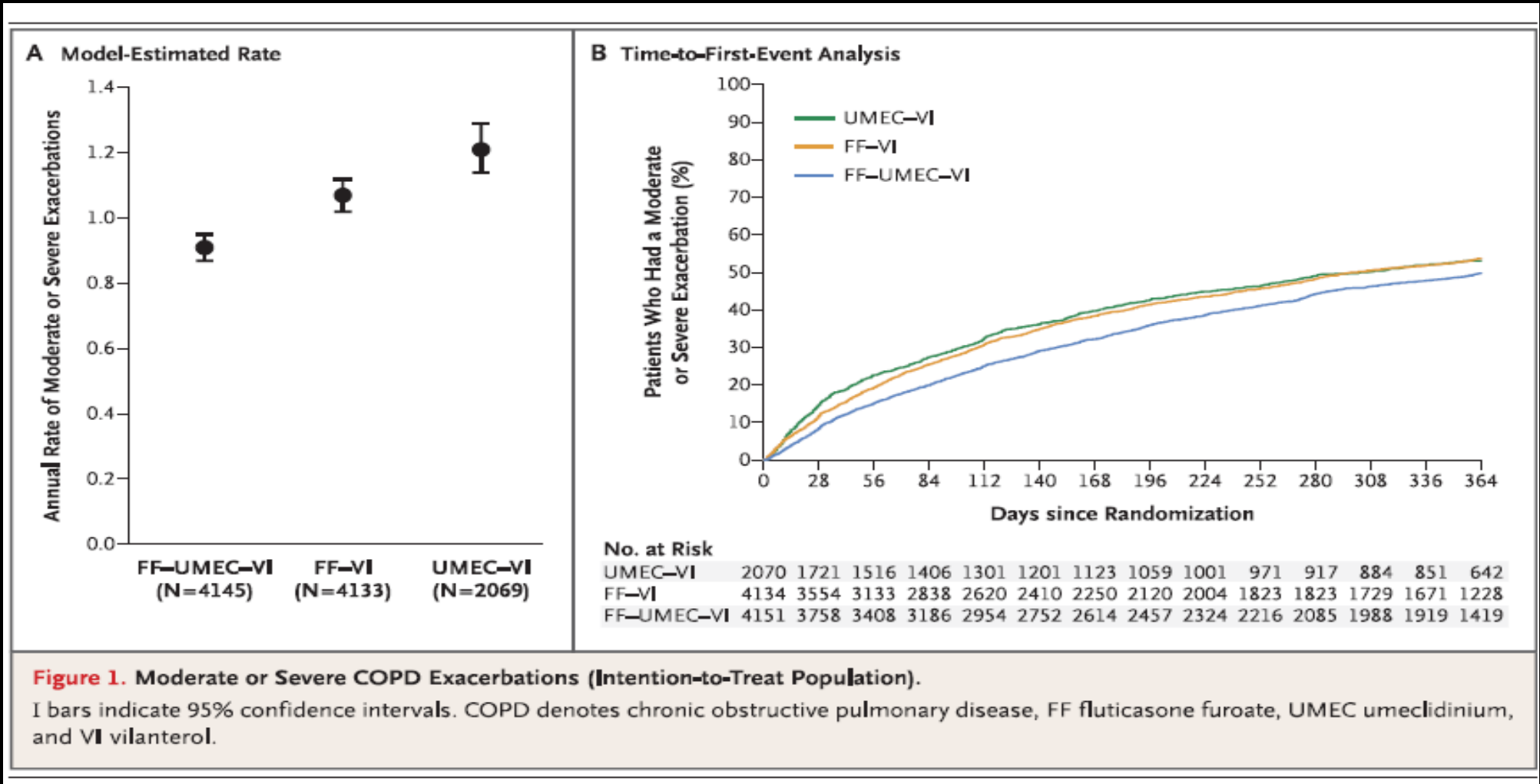


Figure 1. Moderate or Severe COPD Exacerbations (Intention-to-Treat Population).

I bars indicate 95% confidence intervals. COPD denotes chronic obstructive pulmonary disease, FF fluticasone furoate, UMEC umeclidinium, and VI vilanterol.

Lipson et al, New E J Med 18 April 2018

ONCE-DAILY SINGLE-INHALER TRIPLE THERAPY VERSUS DUAL THERAPY IN COPD

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Once-Daily Single-Inhaler Triple versus Dual Therapy in Patients with COPD

CONCLUSIONS

Triple therapy with fluticasone furoate, umeclidinium, and vilanterol resulted in a lower rate of moderate or severe COPD exacerbations than fluticasone furoate–vilanterol or umeclidinium–vilanterol in this population. Triple therapy also resulted in a lower rate of hospitalization due to COPD than umeclidinium–vilanterol. (Funded by GlaxoSmithKline; IMPACT ClinicalTrials.gov number, NCT02164513.)

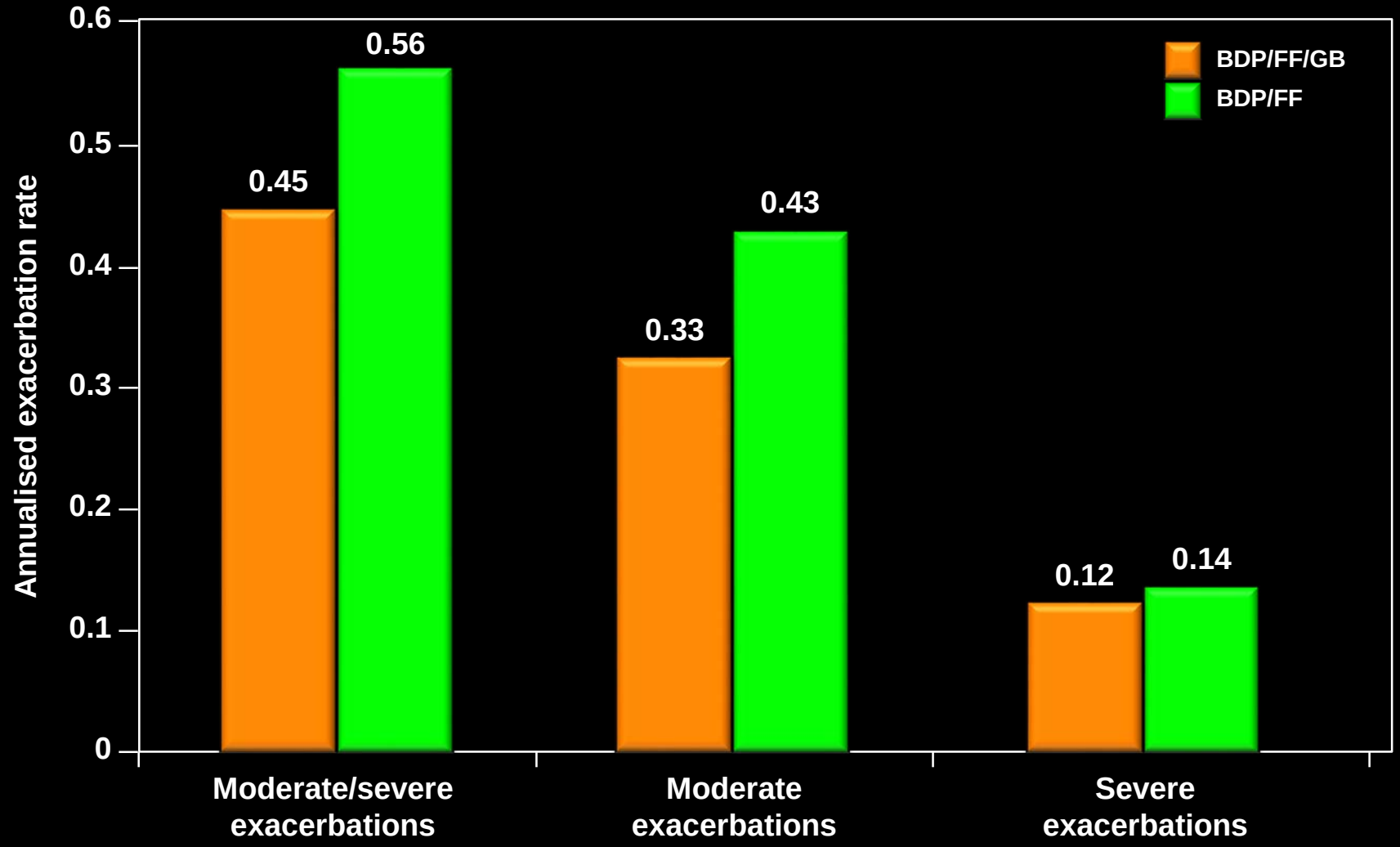
Lipson et al, New E J Med 18 April 2018

SINGLE-INHALER TRIPLE LABA/LAMA/ICS AND LABA/ICS REDUCE MORTALITY COMPARED TO LABA/LAMA DUAL THERAPY IN COPD B AND D PATIENTS

Death during treatment occurred in 50 patients (1%) in the triple-therapy group, 49 patients (1%) in the fluticasone furoate–vilanterol group, and 39 patients (2%) in the umeclidinium–vilanterol group. All-cause mortality was significantly lower with the regimens that included the inhaled glucocorticoid fluticasone furoate (triple therapy and fluticasone furoate–vilanterol) than with umeclidinium–vilanterol. The hazard ratio for triple therapy versus umeclidinium–vilanterol was 0.58 (95% CI, 0.38 to 0.88; 42% difference; unadjusted P=0.01), and the hazard ratio for fluticasone furoate–vilanterol versus umeclidinium–vilanterol was 0.61 (95% CI, 0.40 to 0.93; 39% difference; unadjusted P=0.02). The results of a

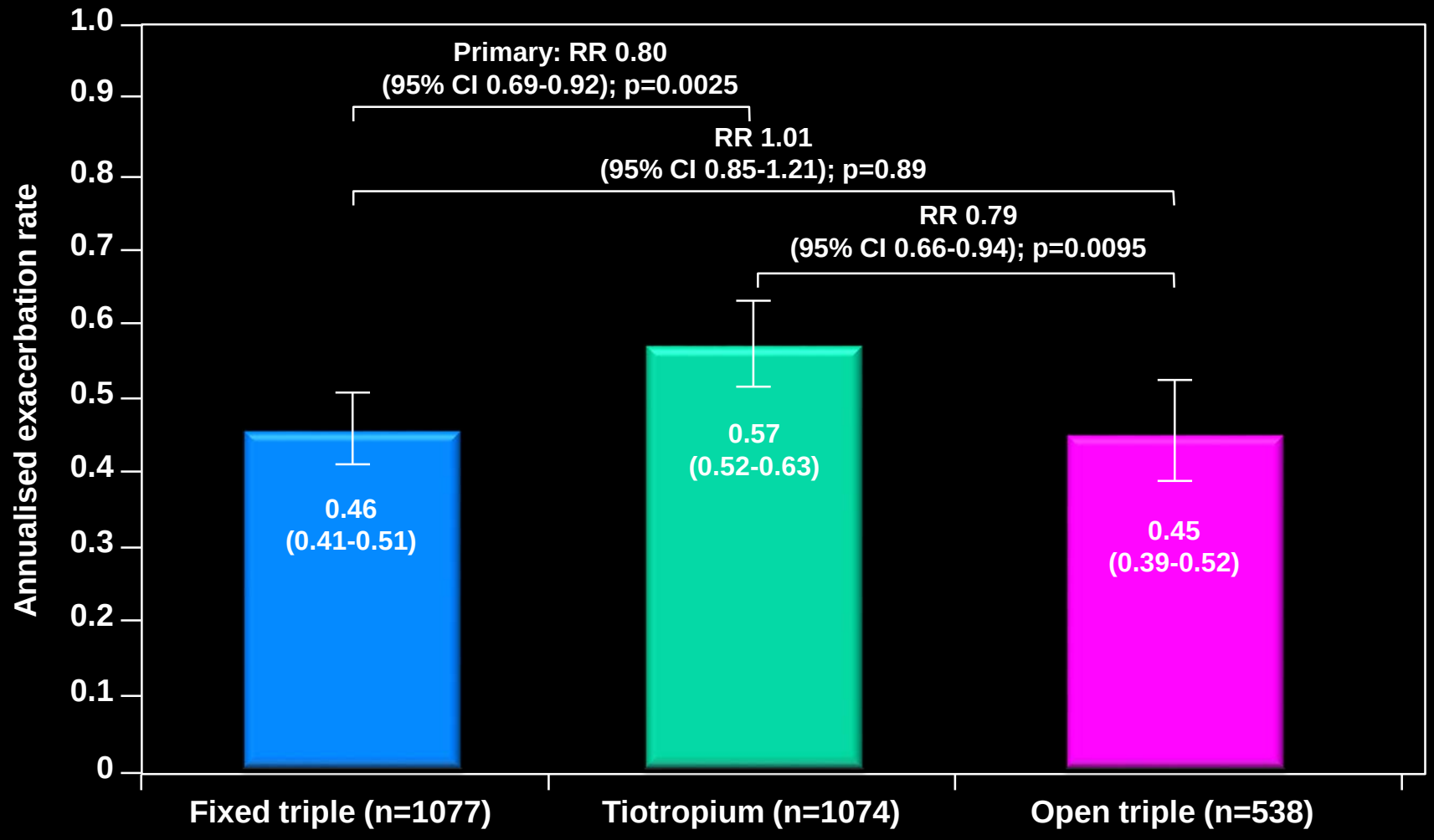
Lipson et al, New E J Med 18 April 2018

TRIPLE IN A SINGLE INHALER IS SUPERIOR TO LABA/ICS IN REDUCING EXACERBATIONS IN D AND B COPD



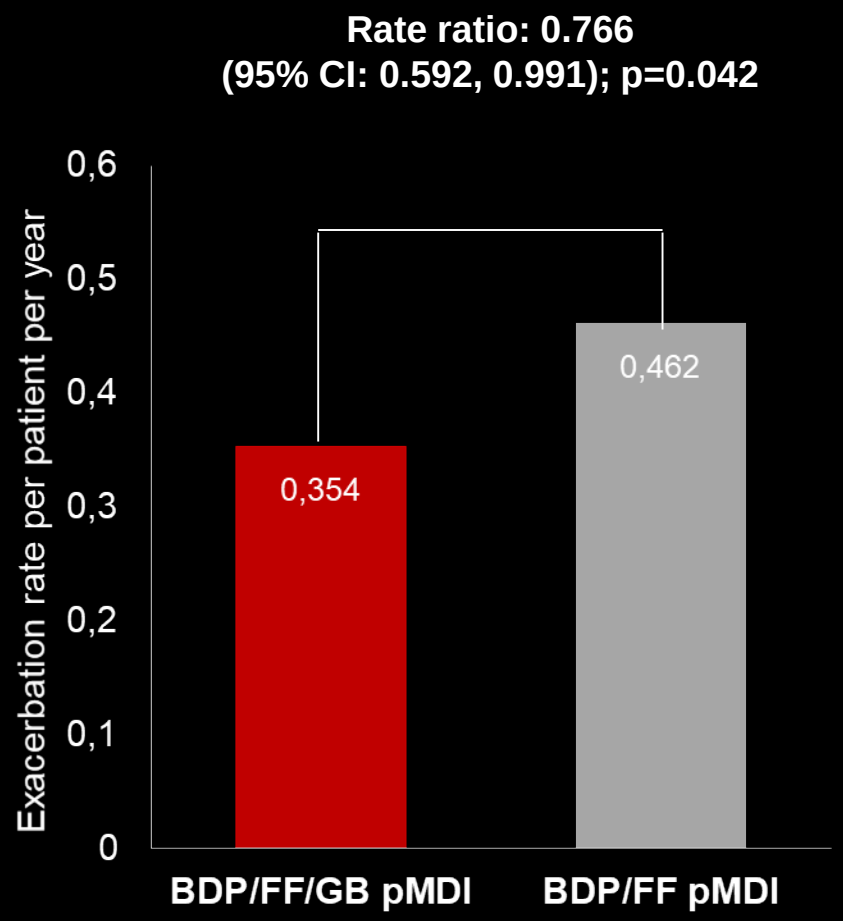
Singh D et al. Lancet 2016; 388: 963–73

TRIPLE IN A SINGLE INHALER IS SUPERIOR TO TIOTROPIUM IN REDUCING EXACERBATIONS IN D AND B COPD

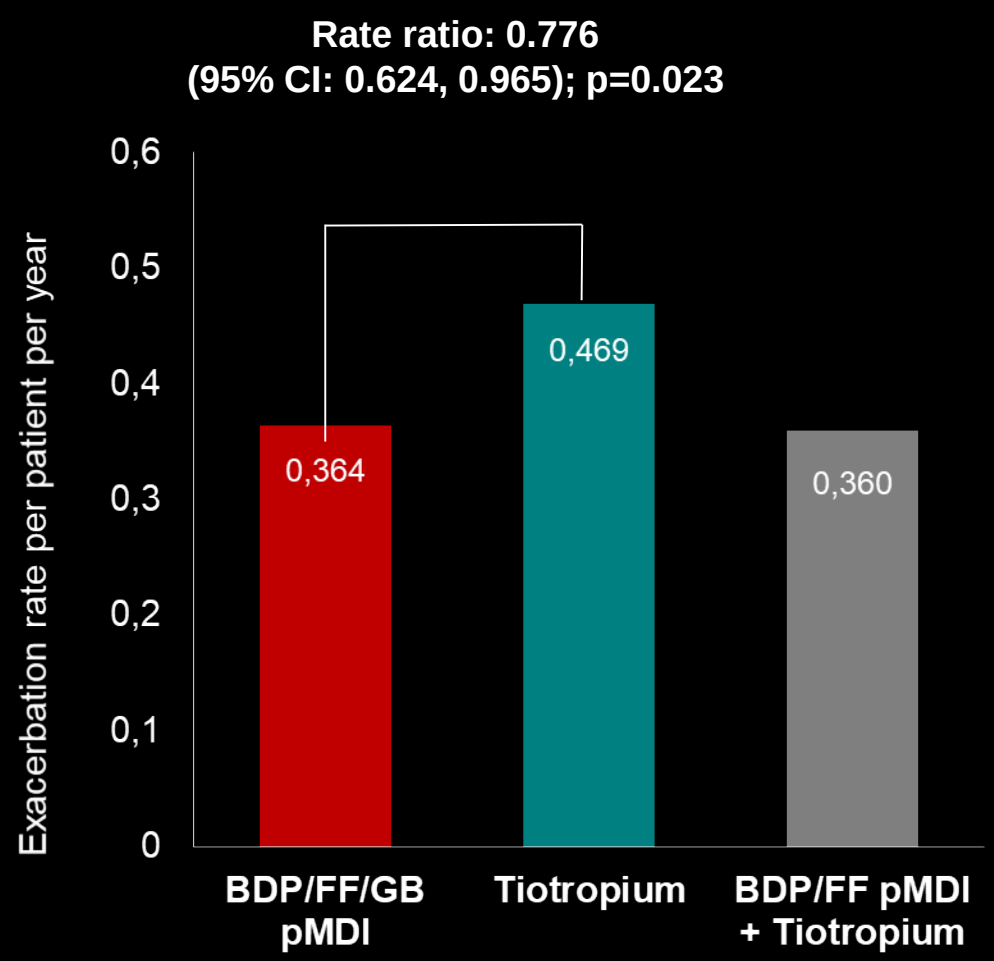


Vestbo J. et al., Lancet 2017; 389: 1919–29

MODERATE/SEVERE COPD EXACERBATIONS IN GOLD B PATIENTS



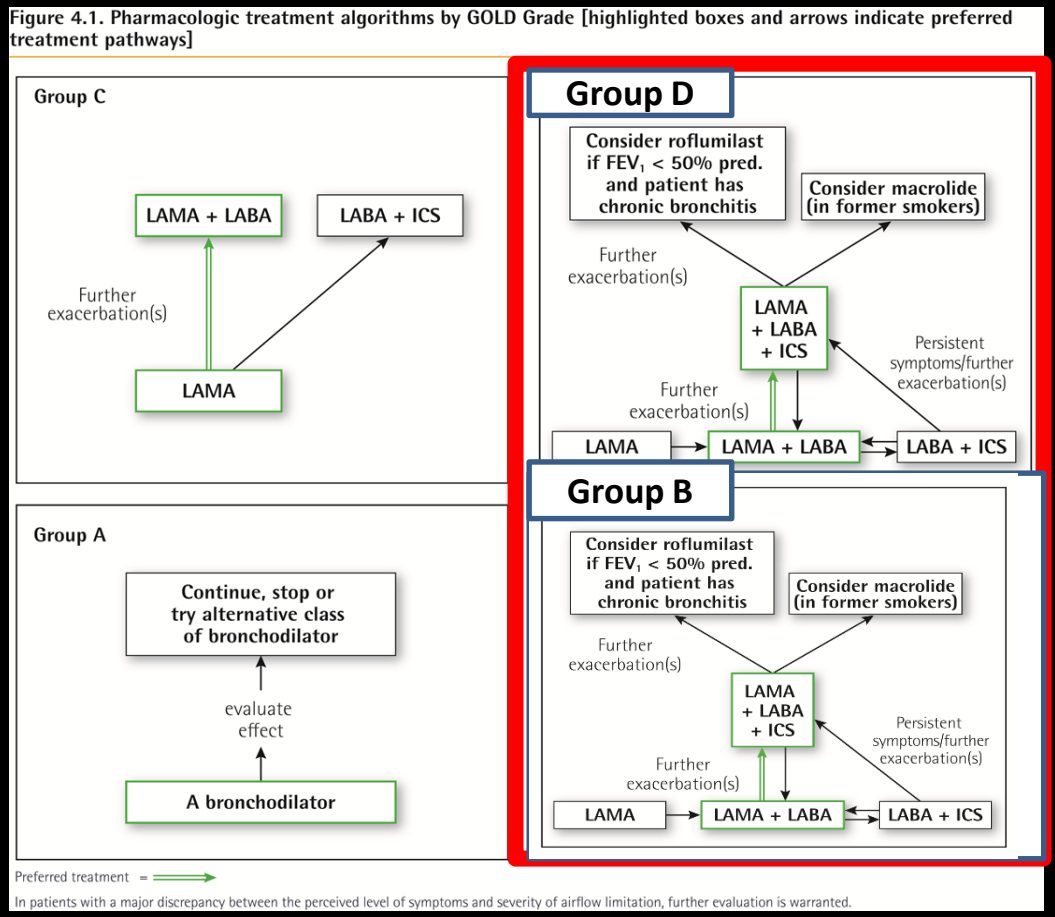
TRILOGY



TRINITY

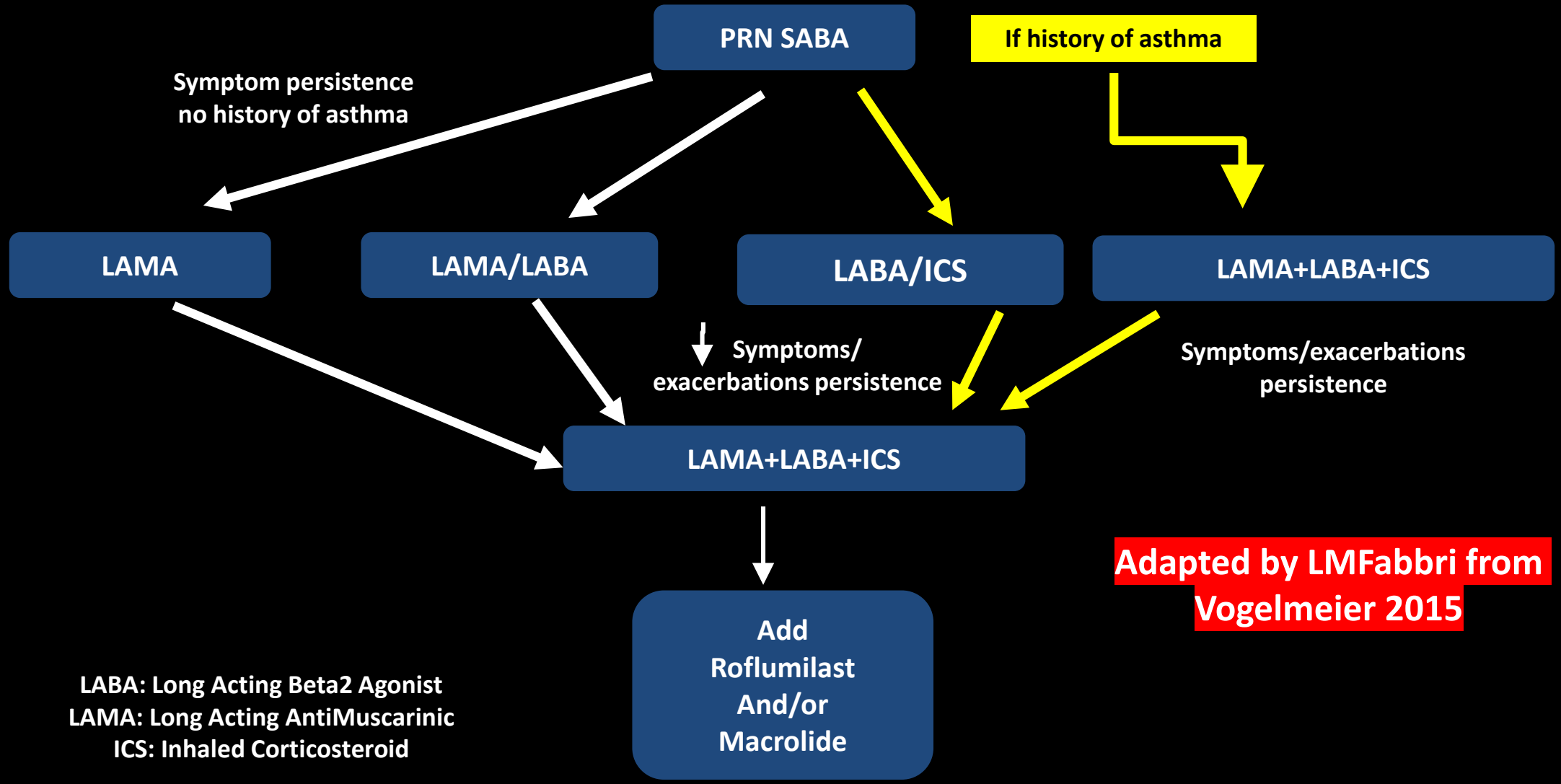
LATE BREAKING ABSTRACT – Scuri et al, OA2898 ERS 2017

ABCD ASSESSMENT TOOL
TREATMENT RECOMMENDATIONS



Suggestions to the Global Initiative for Chronic Obstructive Lung Disease

TREATMENT ALGORYTHM FOR SYMPTOMATIC COPD PATIENTS WITH OR WITHOUT RISK OF EXACERBATIONS

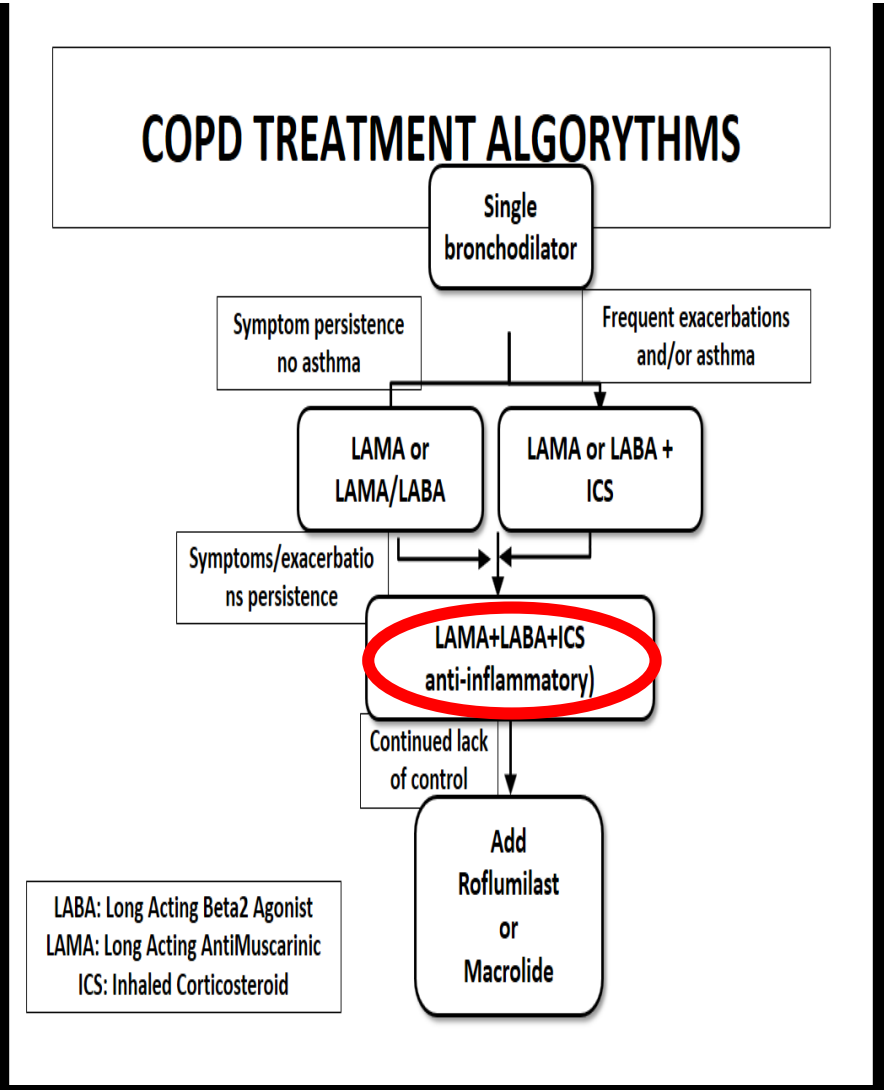


Adapted by LMFabbri from Vogelmeier 2015

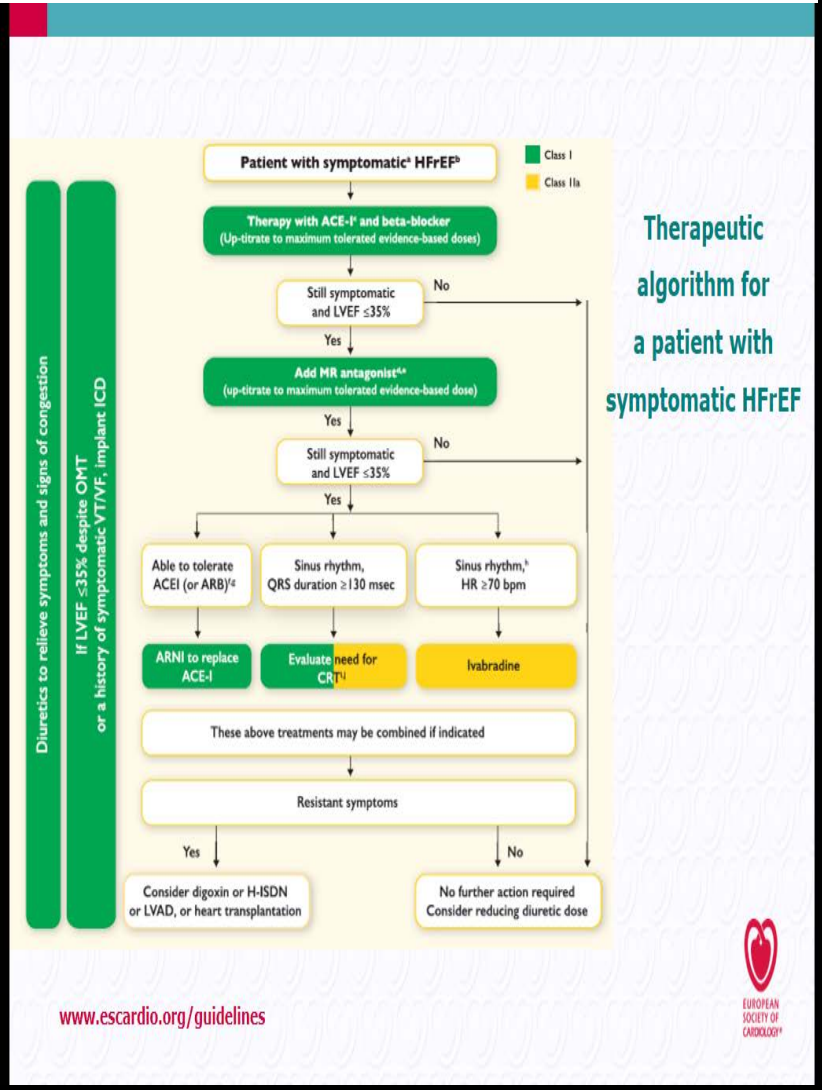
LABA: Long Acting Beta2 Agonist
LAMA: Long Acting AntiMuscarinic
ICS: Inhaled Corticosteroid

AT DOCTOR'S DISCRETION, DEPENDING ON CONDITIONS AT THE MOMENT OF THE FIRST TIME THE DOCTOR SEE THE PATIENT (eg after an acute exacerbation, uncontrolled under any type of regular treatment), PATIENTS CAN BE PUT DIRECTLY IN LAMA, LABA/ICS, TRIPLE OR EVEN ICS ONLY (if arrhythmia, chronic heart failure and ischemi heart disease)

COPD CHF TREATMENT ALGORYTHMS



2017 GOLD Strategy Document



2016 ESC Guidelines on CHF

QUARTER-DOSE QUADRUPLE COMBINATION THERAPY FOR INITIAL TREATMENT OF HYPERTENSION

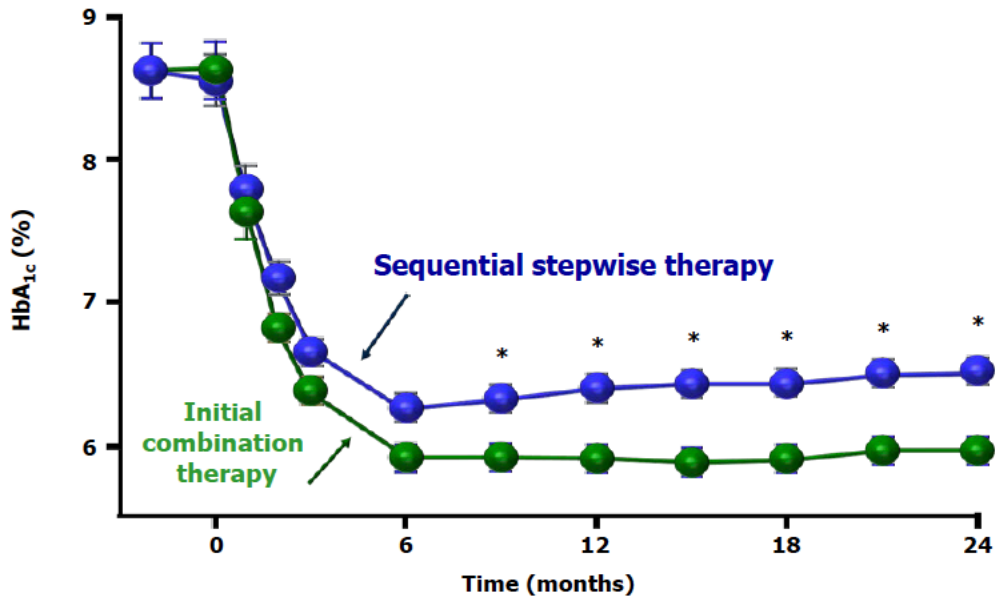
Quarter-dose quadpill therapy could be additive across classes and might confer a clinically important reduction in blood pressure

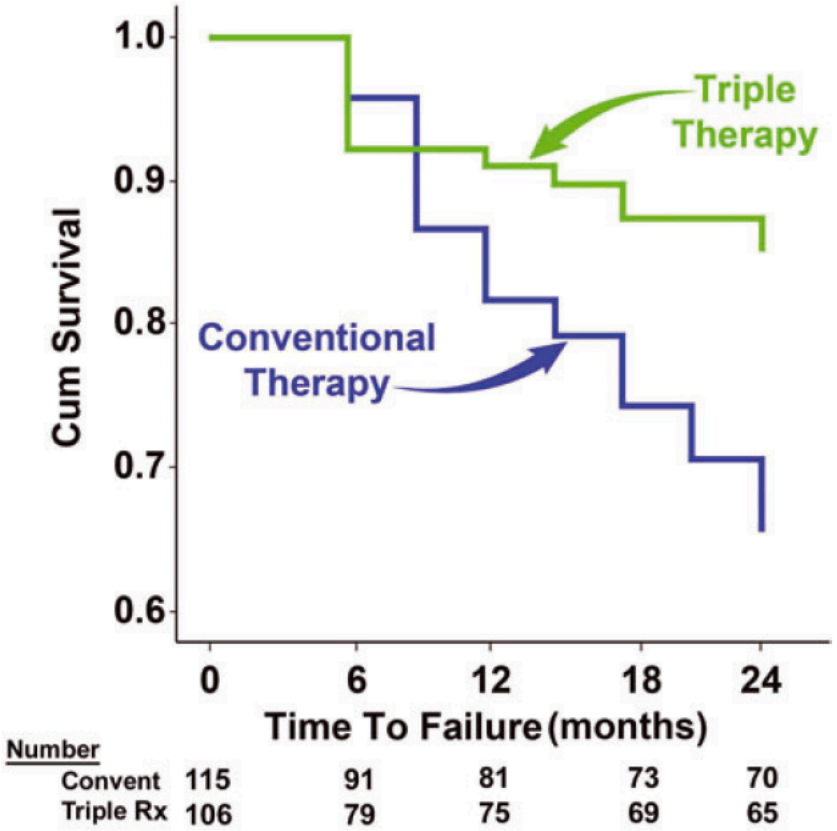
Further examination of the quadpill concept is needed to investigate effectiveness against usual treatment options and longer term tolerability

Chow CK et al, Lancet, 12 Feb 2017, on line

Initial combination therapy with metformin, pioglitazone and exenatide is more effective than sequential add-on therapy in subjects with new-onset diabetes

The intensive group was treated with MET/TZD/GLP-1 RA, and the conventional group was treated with metformin with sequential addition of an SU and then glargine insulin.

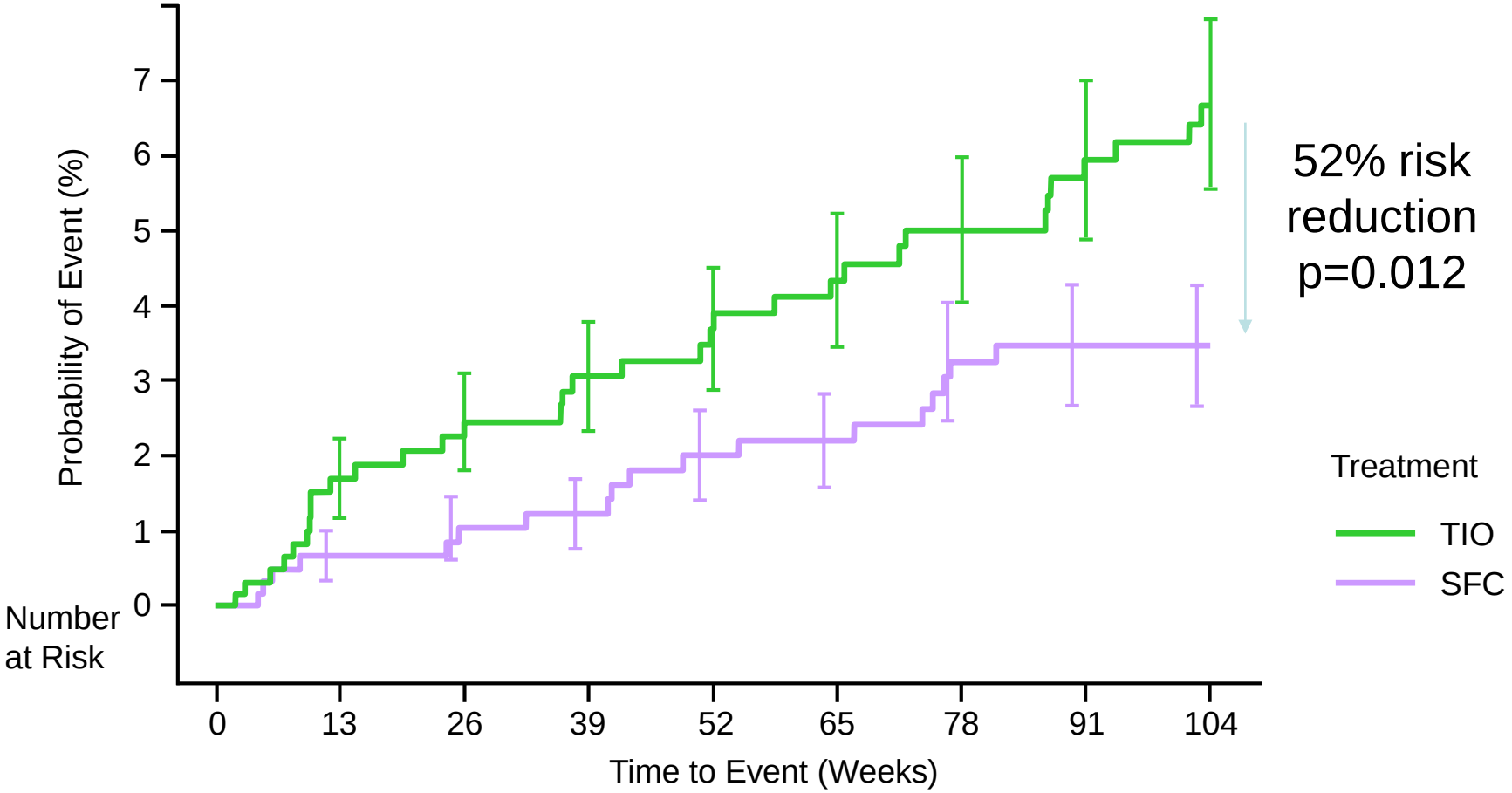




Abdul-Ghani MA et al. Diabetes Obes Metab.17:268–275, 2015

MORTALITY IN INSPIRE

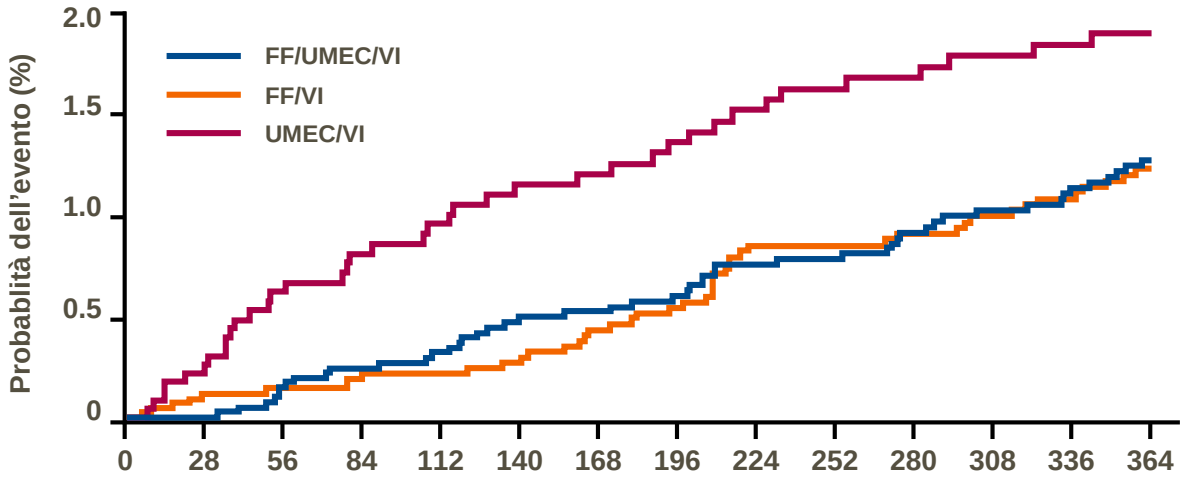
***up to 2 weeks after treatment cessation; 7 patients excluded from analysis (3 SFC, 4 TIO)**



	Hazard Ratio	95% CI	p-value
SFC vs TIO	0.48	(0.27, 0.85)	0.012

Wedzicha JA, *et al*. AJRCCM *2008*

IMPACT MORTALITY (dati on-treatment)



Numero di soggetti a rischio														
FF/UMEC/VI	4151	4082	3968	3898	3838	3752	3714	3690	3613	3581	3545	3486	3454	3346
FF/VI	4134	3984	3798	3694	3619	3496	3443	3391	3291	3258	3230	3182	3152	3044
UMEC/VI	2070	1993	1880	1820	1769	1713	1685	1656	1612	1595	1578	1548	1531	1485

FF/UMEC/VI vs UMEC/VI

42.1%

HR 0.58
(95% CI: 0.38, 0.88)
p=0.011

FF/VI vs UMEC/VI

38.7%

HR 0.61
(95% CI: 0.40, 0.93)
p=0.022

FF: fluticasone furoate; UMEC: umeclidinio bromuro; VI: vilanterolo trifenatato; HR: hazard ratio

Lipson DA et al NEJM 2018

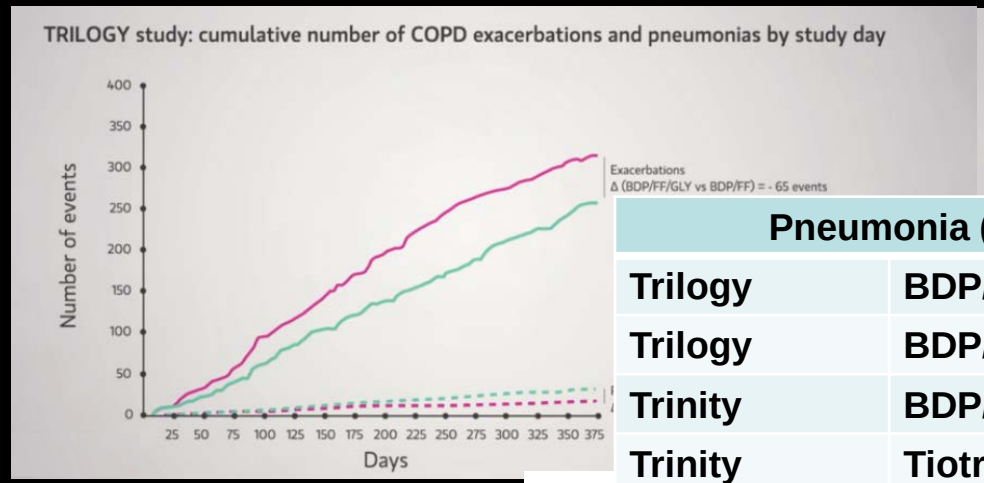
TREATMENT-EMERGENT ADVERSE EVENTS - TRIBUTE

Patients with	BDP/FF/G N = 764	IND/GLY N = 768
AEs	490 (64.1%)	516 (67.2%)
ADRs	43 (5.6%)	37 (4.8%)
SAEs	117 (15.3%)	130 (16.9%)
Serious ADRs	1 (0.1%)	1 (0.1%)
AEs leading to discontinuation	37 (4.8%)	47 (6.1%)
AEs leading to death	16 (2.1%)	21 (2.7%)
Any pneumonia	28 (3.7%)	27 (3.5%)

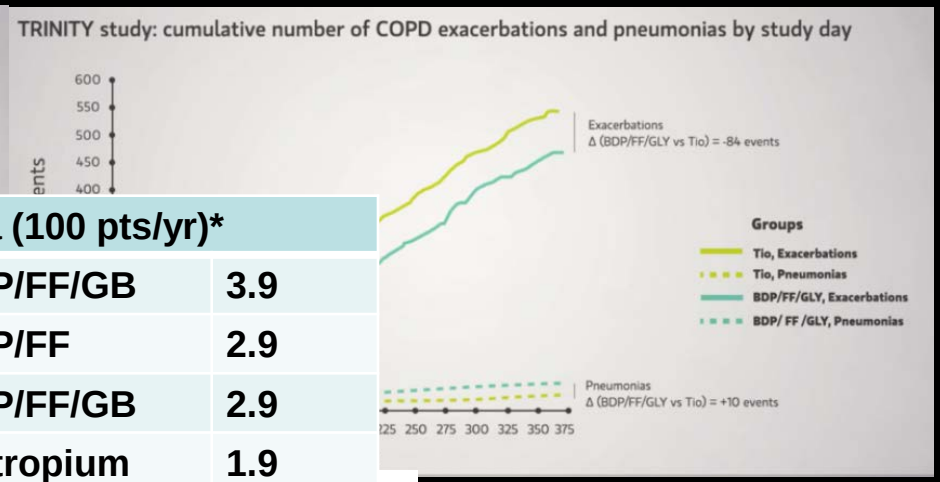
Papi A et al. Lancet 2018; 391(10125): 1076-84

RISK-BENEFIT RATIO (COPD EXACERBATIONS AND PNEUMONIAS) IN TRILOGY, TRINITY AND TRIBUTE STUDIES

TRILOGY

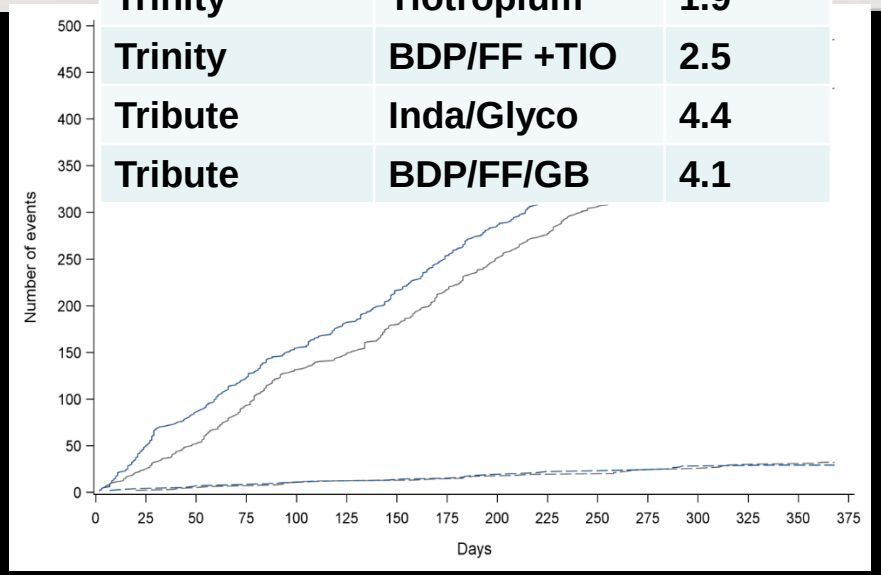


TRINITY



Pneumonia (100 pts/yr)*		
Trilogy	BDP/FF/GB	3.9
Trilogy	BDP/FF	2.9
Trinity	BDP/FF/GB	2.9
Trinity	Tiotropium	1.9
Trinity	BDP/FF +TIO	2.5
Tribute	Inda/Glyco	4.4
Tribute	BDP/FF/GB	4.1

TRIBUTE



Singh D et al., Lancet 2016;

Vestbo J et al., Lancet 2017;

Papi A et al., Lancet 2018

RISK REDUCTION FOR HYPERTENSION, IHD, MI, ATRIAL FIBRILLATION IN TRIBUTE

Number (%) of patients	BDP/FF/G (N=764)	IND/GLY (N=768)
Adverse events	490 (64.1)	516 (67.2)
COPD worsening	273 (35.7)	288 (37.5)
Pneumonia	28 (3.7)	27 (3.5)
Hypertension	15 (2.0)	26 (3.4)
Cough	13 (1.7)	25 (3.3)
Ischemic heart disease	8 (1.0)	16 (2.1)
Serious adverse events	117 (15.3)	130 (16.9)
COPD worsening	61 (8.0)	69 (9.0)
Death	3 (0.4)	8 (1.0)
Ischemic heart disease	2 (0.3)	11 (1.4)
Myocardial infarction	1 (0.1)	8 (1.0)
Atrial fibrillation	0	7 (0.9)

Papi et al, The Lancet, Lancet 2018 Mar 17;391(10125):1076-1084

TREATMENT-EMERGENT ADVERSE EVENTS TRIBUTE

Number (%) of patients	BDP/FF/G (N=764)	IND/GLY (N=768)
Treatment-related adverse events	12 (1.6)	6 (0.8)
Oral candidiasis	12 (1.6)	6 (0.8)
Dry mouth	3 (0.4)	6 (0.8)
Cough	1 (0.1)	7 (0.9)
Treatment-related serious adverse events	1 (0.1)	1 (0.1)
Severe adverse events	86 (11.3)	87 (11.3)
Adverse events leading to death	16 (2.1)	21 (2.7)

Papi et al, The Lancet, Lancet 2018 Mar 17;391(10125):1076-1084

POOL DATA ON MORTALITY (ATS/ERS ABSTRACT)

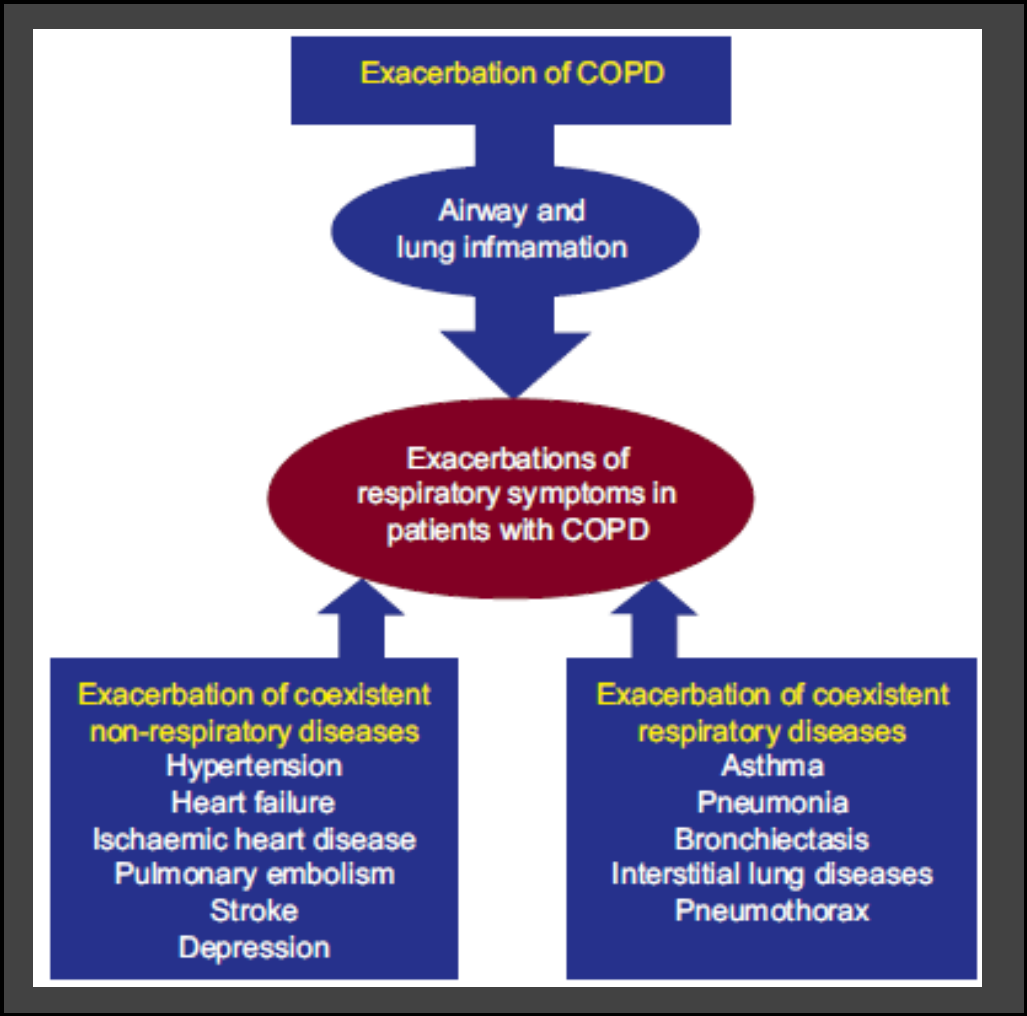
Table 1. Patients (%) with fatal AEs and Hazard Ratios for the treatment group comparisons in TRILOGY, TRINITY and TRIBUTE					
Study	**Test**	**Comparator**	**Number of patients with event (%) - Test**	**Number of patients with event (%) - Comparator**	**Hazard Ratio (95% CI), p-value**
Single					
TRILOGY	BDP/FF/G (N=687)	BDP/FF (N=680)	15 (2.2%)	16 (2.4%)	-
TRINITY	BDP/FF/G (N=1077)	TIO (N=1076)	20 (1.9%)	29 (2.7%)	-
	'	BDP/FF+TIO (537)	'	8 (1.5%)	-
TRIBUTE	BDP/FF/G (N=764)	IND/GLY (N=768)	16 (2.1%)	21 (2.7%)	
Pooled					
TRILOGY, TRINITY, TRIBUTE	BDP/FF/G, BDP/FF, BDP/FF+TIO (N=3745)	TIO, IND/GLY (N=1844)	75 (2.0%)	50 (2.7%)	0.72 (0.50; 1.02), p=0.066
	BDP/FF/G (N=2528)	TIO, IND/GLY (N=1844)	51 (2.0%)	50 (2.7%)	0.72 (0.49; 1.06), p=0.096

Scuri et al, Am J Respir Crit Care Med 2018;197:Abstract 7725

ERS 2018 Submitted Abstract

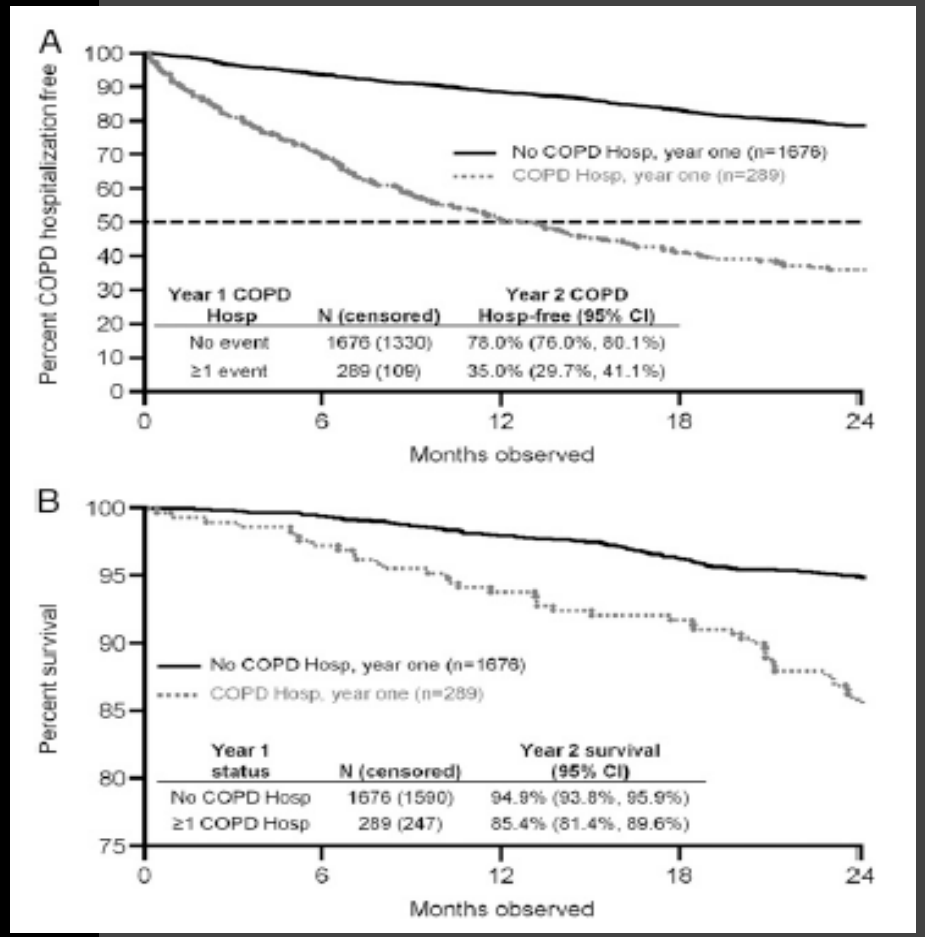
	BDP/FF/G, BDP/FF, BDP/FF+TIO (n=3745)	TIO, IND/GLY (N=1844)	
	N of patients with events (%)		HR (95%, CI), p-value
RESPIRATORY	19 (0.5%)	9 (0.5%)	1.01 (0.45; 2.22) p=0.990
NON-RESPIRATORY	56 (1.5%)	41 (2.2%)	0.65 (0.43; 0.97) p=0.037

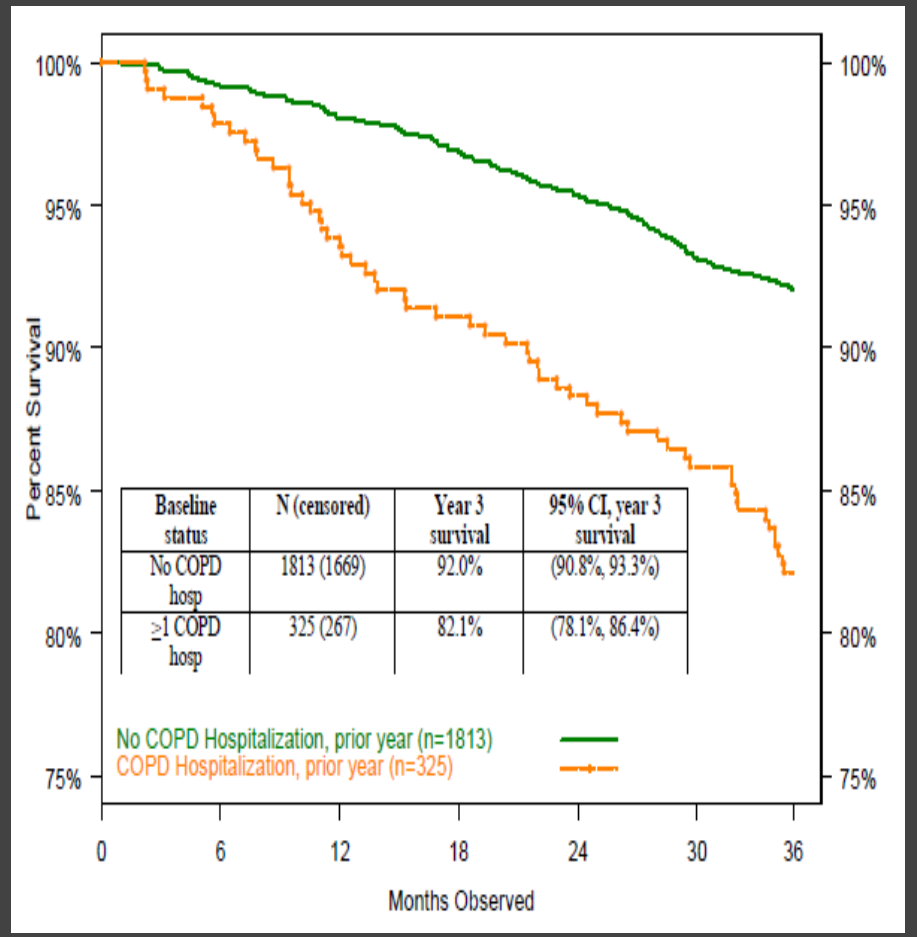
EXACERBATIONS OF RESPIRATORY SYMPTOMS IN PATIENTS WITH COPD MAY NOT BE EXACERBATIONS OF COPD



Beghé B, Verduri A, Roca M and Fabbri LM. Eur Respir J 2013; 41: 993-5
Roca M, Verduri A, Clini EM, Fabbri LM and Beghé B. Eur J Clin Invest, 2013;43:510

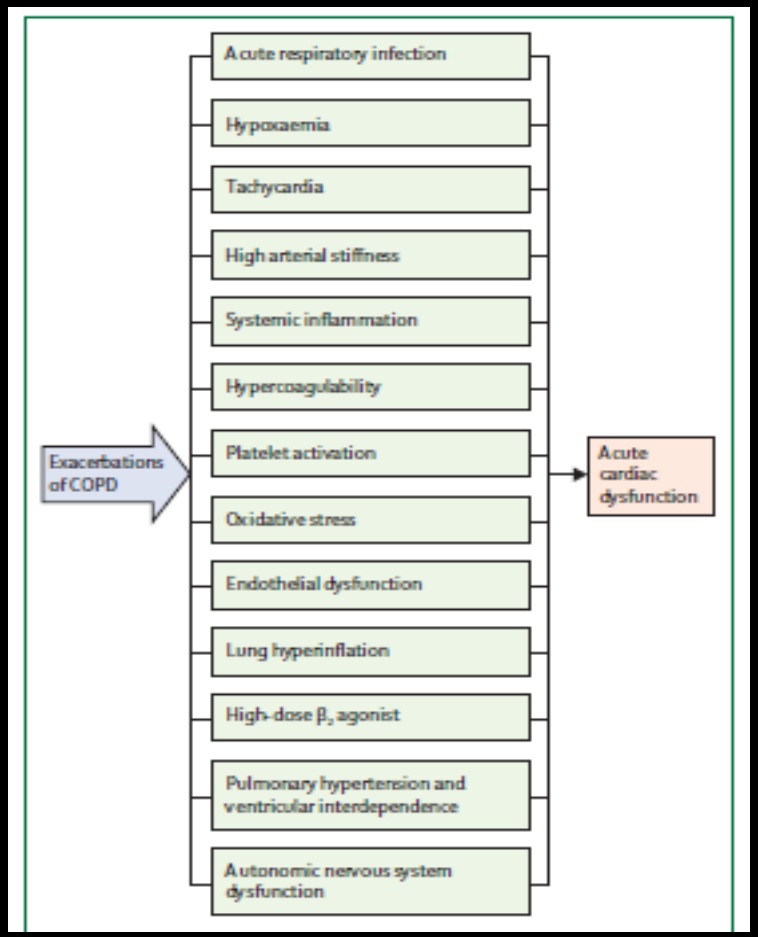
RISK OF MORTALITY IN PATIENTS WITH OR WITHOUT HISTORY OF HOSPITALIZATIONS DUE TO COPD EXACERBATIONS IN THE ECLIPSE STUDY

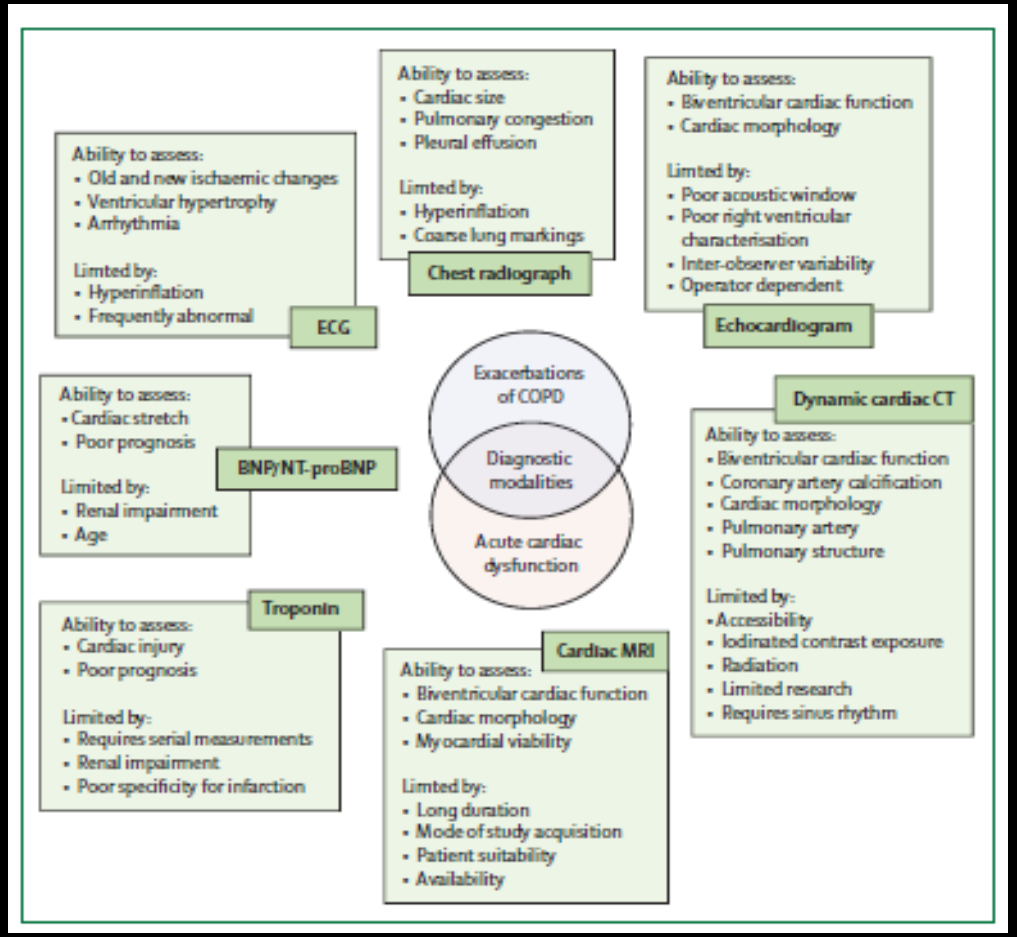




Mullerova et al, Chest 2015 Apr;147(4):999-1007

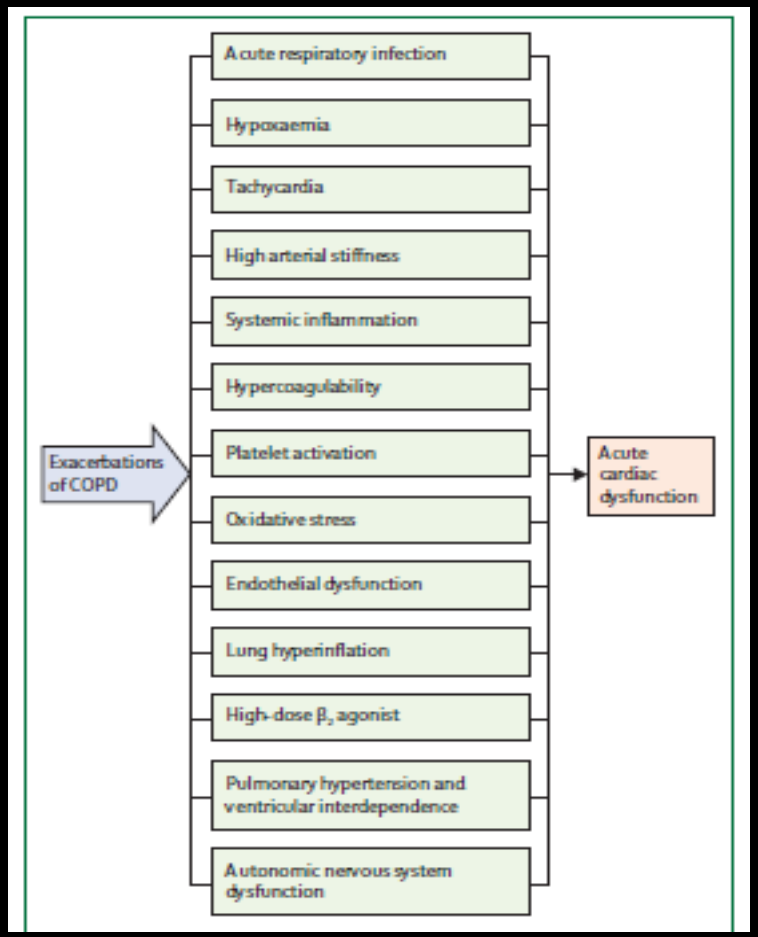
CARDIAC DYSFUNCTION DURING EXACERBATIONS OF COPD

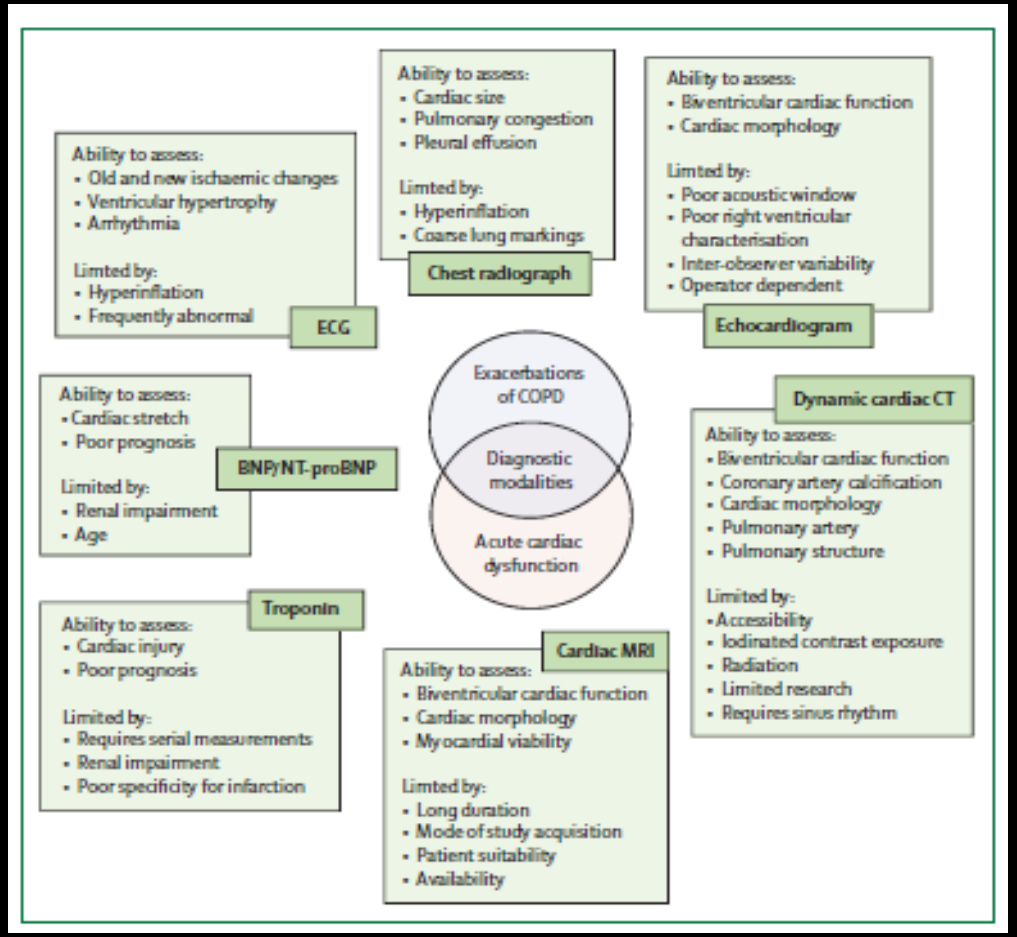




MacDonald et al. Lancet Resp Med 2016; 4:138-148

CARDIAC DYSFUNCTION DURING EXACERBATIONS OF COPD



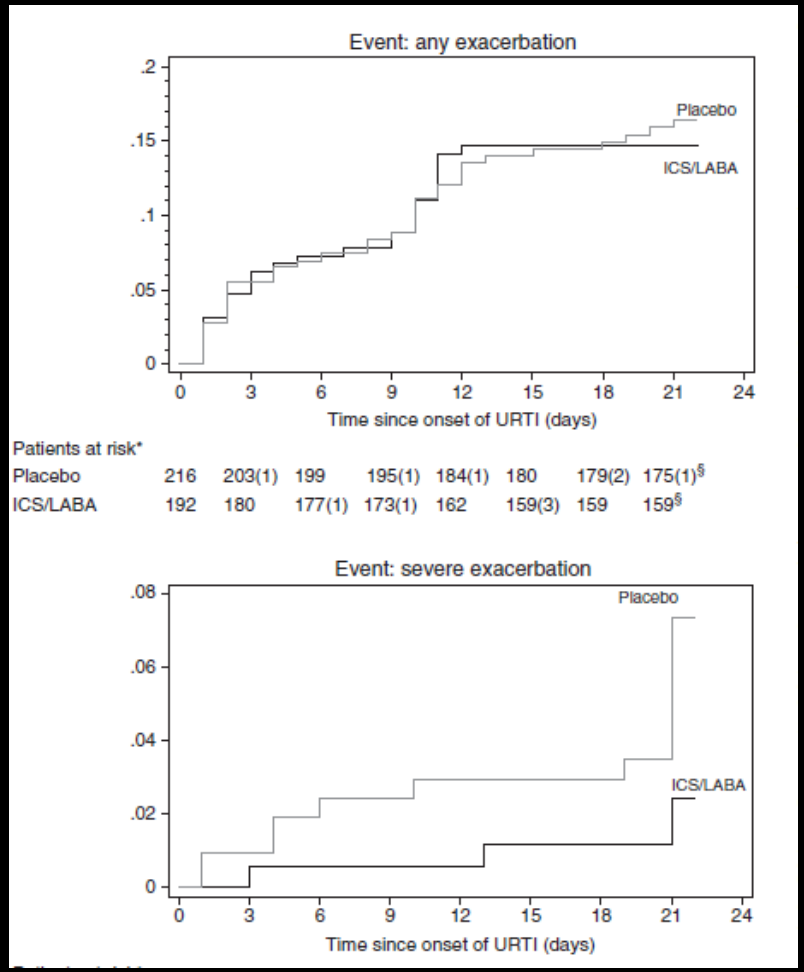


MacDonald et al. Lancet Resp Med 2016; 4:138-148

INTENSIFIED THERAPY WITH INHALED CORTICOSTEROIDS AND LONG-ACTING B_2-AGONISTS AT THE ONSET OF UPPER RESPIRATORY TRACT INFECTION TO PREVENT CHRONIC OBSTRUCTIVE PULMONARY DISEASE EXACERBATIONS. A MULTICENTER, RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED TRIAL

Intensified combination therapy with ICS/LABA for 10 days at URTI onset did not decrease the incidence of any COPD exacerbation but prevented severe exacerbation

Patients with more severe disease had a significant risk reduction for any exacerbation



Stolz et al, Am J Respir Cr Care Med 2018; 197(9):1136-1146

NUOVI FARMACI IN SVILUPPO PER LA BPCO

Leonardo M. Fabbri, MD, FERS

The changes in the definition and assessement of severity of COPD

The recent studies of efficacy and safety of triple therapy in a single inhaler is likely to introduce major changes in the pharmacologic management of COPD

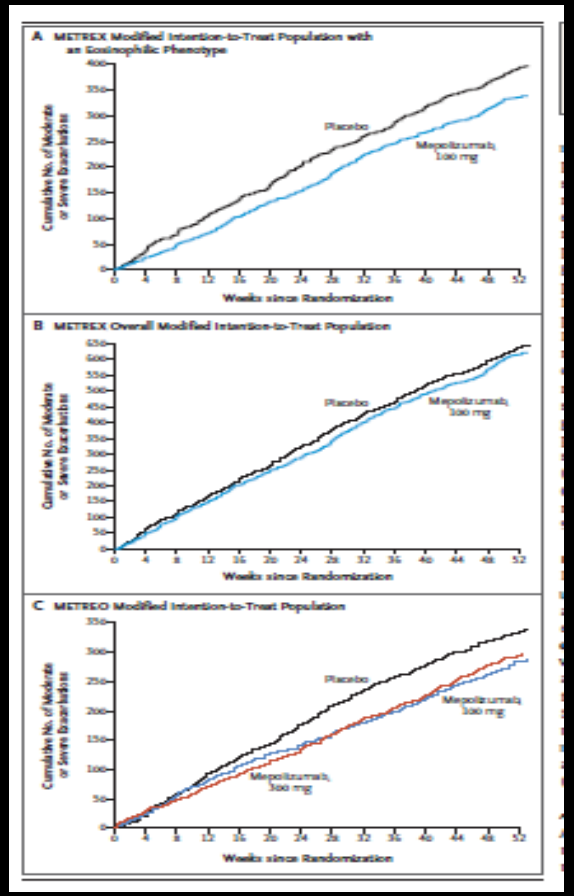
Anti IL-5 Moa, new experimental agents

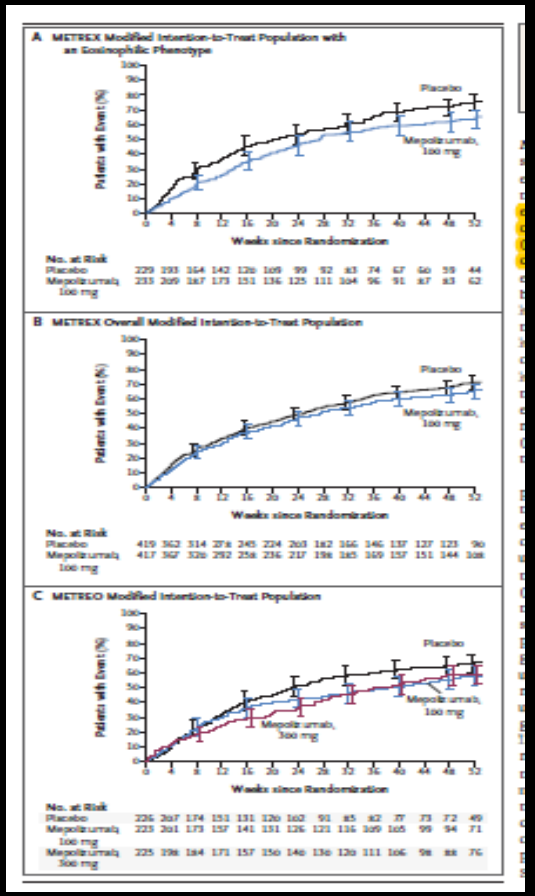
TREAT THE PATIENT WITH COPD NOT JUST COPD

MEPOLIZUMAB FOR EOSINOPHILIC CHRONIC OBSTRUCTIVE PULMONARY DISEASE

Mepolizumab at a dose of 100 mg was associated with a lower annual rate of moderate or severe exacerbations than placebo among patients with COPD and an eosinophilic Phenotype

This finding suggests that eosinophilic airway inflammation contributes to COPD exacerbations.





Pavord et al, N Engl J Med 2017; 377:1613-1629

ASTRAZENECA PRESS RELEASE

30 MAY 2018

TERRANOVA TRIAL DID NOT MEET THE PRIMARY ENDPOINT OF A STATISTICALLY-SIGNIFICANT REDUCTION OF EXACERBATIONS IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

AstraZeneca and MedImmune, its global biologics research and development arm, today announced top-line results from TERRANOVA, the second of two pivotal Phase III trials for *Fasenra* (benralizumab) in patients with moderate to very severe chronic obstructive pulmonary disease (COPD)

The trial did not meet the primary endpoint of a statistically-significant reduction of exacerbations. This news follows the announcement earlier this month that the first pivotal Phase III trial, GALATHEA, did not meet its primary endpoint

EFFECTIVENESS OF ACUMAPIMOD ORAL P38 INHIBITOR IN THE TREATMENT OF ACUTE SEVERE EXACERBATIONS OF COPD: RESULTS OF THE AETHER PHASE II TRIAL

Mitogen-activated protein kinase p38, a key regulator in the inflammation pathway, is activated in COPD and by triggers of exacerbations

Acumapimod, an oral, p38 inhibitor is being investigated for the treatment of acute exacerbations

Acumapimod over 5 days of an acute exacerbation was well tolerated and demonstrated significant effects on need for re-hospitalisation for AECOPD

Acumapimod has demonstrated potential to deliver meaningful clinical benefits in the treatment of AECOPD through reduction in the patient and healthcare burden of treatment failures and recurrent exacerbations.

Wedzicha et al, Am J Respir Crit Care Med 2018;197:A7710

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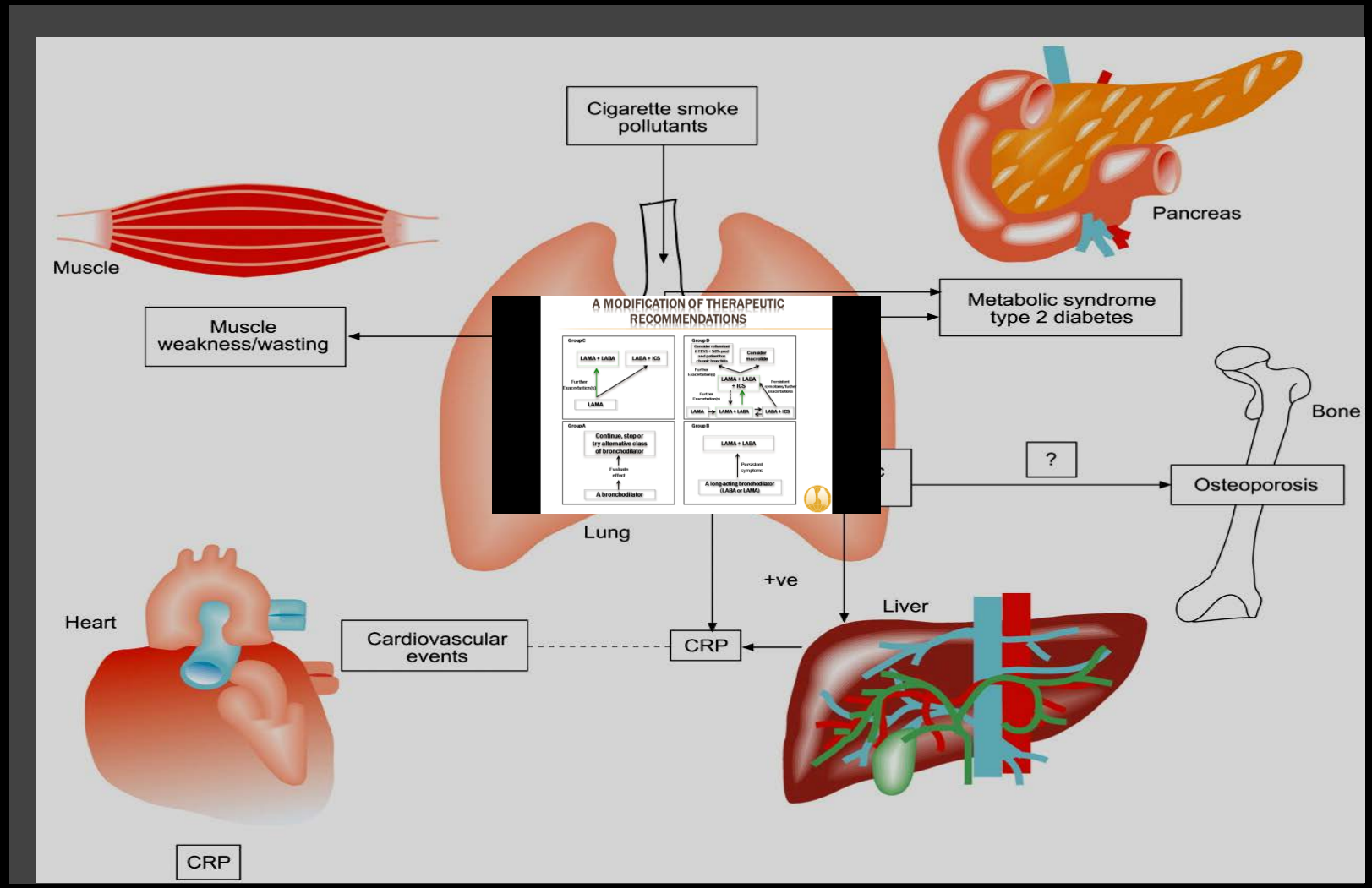
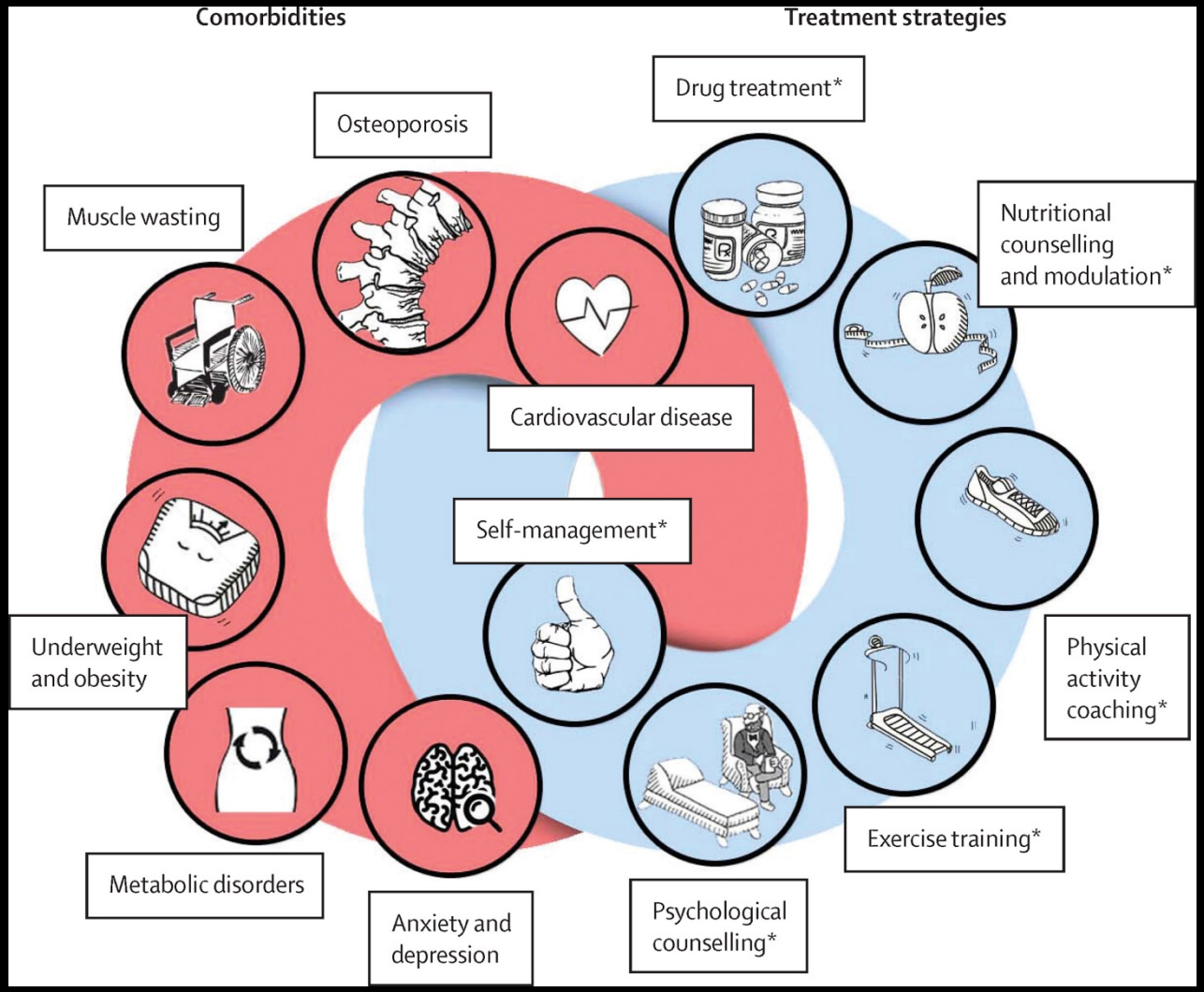
COPD AS THE PULMONARY COMPONENT OF MULTIMORBIDITY



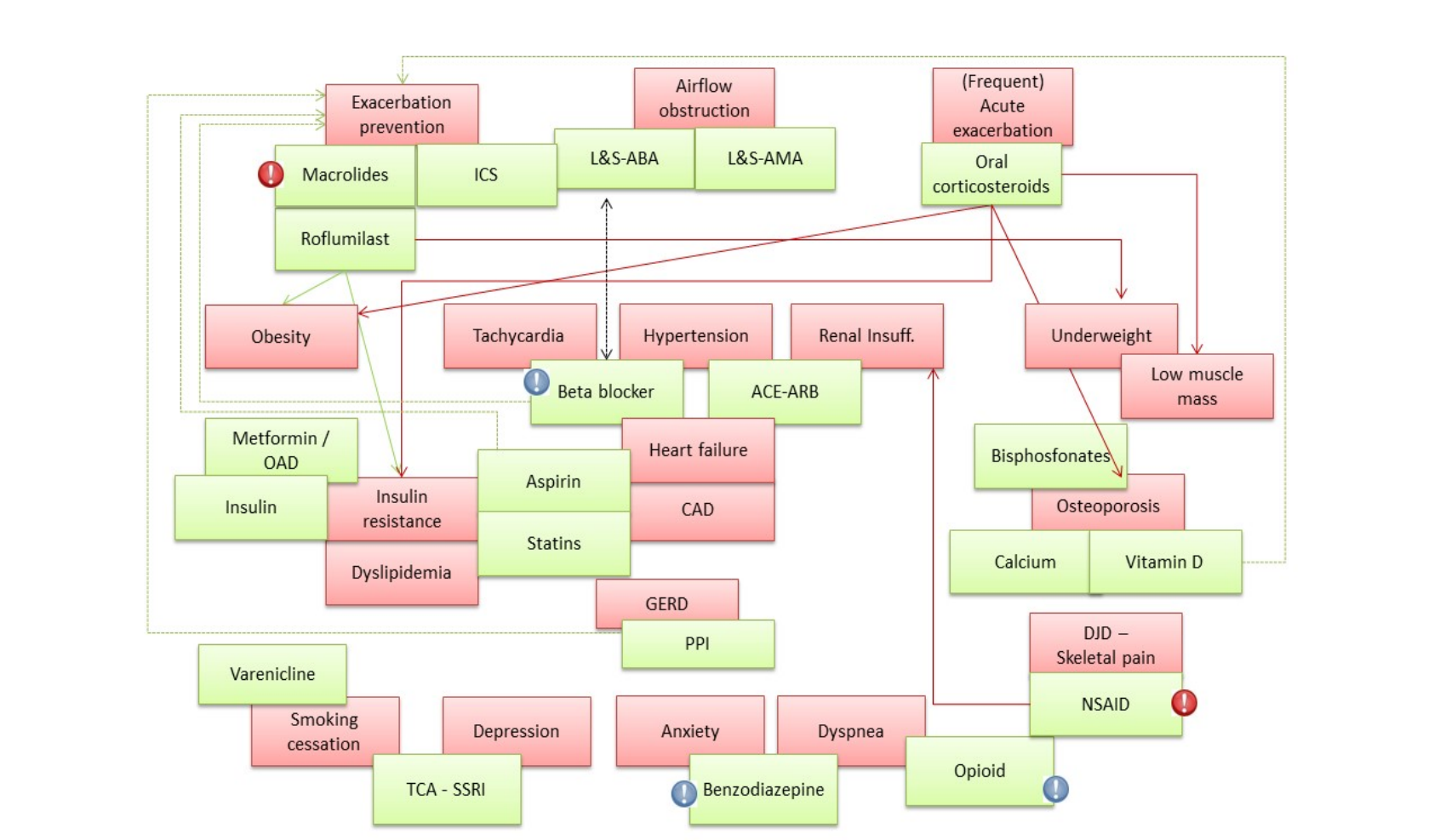
Fabbri LM, Luppi F, Beghe B, and Rabe KF - Eur Respir J 2008;31:204-212

Figure 1



Vanfleteren et al. Lancet Respir Med 2016 Nov;4(11):911-924

THE PHARMACOLOGICAL PERSPECTIVE FOR AN INTEGRATED MANAGEMENT OF COPD AND ITS COMORBIDITIES



Vanfleteren et al. Lancet Respir Med 2016

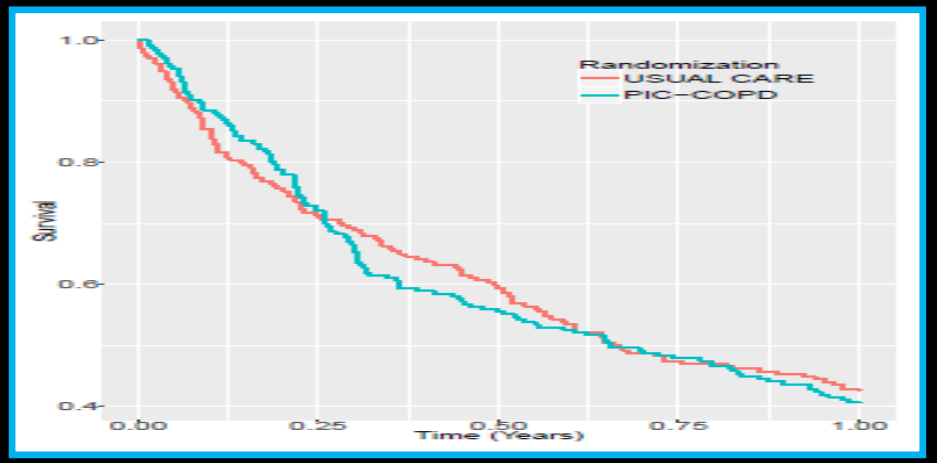
PROGRAM OF INTEGRATED CARE FOR PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE AND MULTIPLE COMORBIDITIES (PIC COPD+): A RANDOMIZED CONTROLLED TRIAL

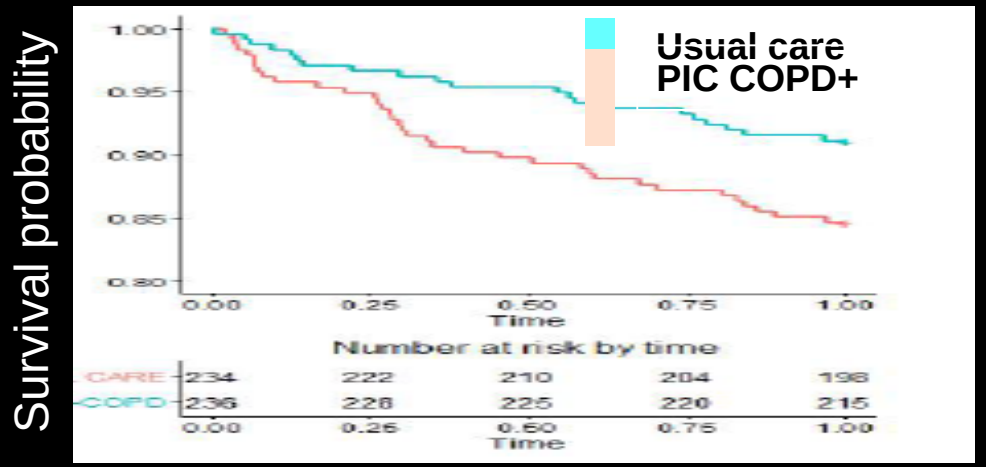
Our model resulted in

1. fewer ED presentations

2. hospital admissions

3. Estimated risk of death in the intervention group was nearly half that of the control





Istanboulian et al, Am J Respir Cr Care Med, April 2017, Abstract 6739

TIME FOR A LONGER AND BETTER LIFE FOR PATIENTS WITH COPD

In this issue of the journal are two important management studies consistently showing a considerable reduction of mortality in patients comprehensively treated with management plans that address not only the COPD component but also the complexity of multimorbidities

We believe it is time to conduct a properly designed and powered study with the goal of combining all these positive observations to achieve a better quality of life for patients with severe multimorbidities. Let's move this forward.

Vanfleteren, Ullman, Fabbri, Eur Respir J, January 2018

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PNEUMOLOGIA 2018
MILANO, 14 – 16 GIUGNO 2018
CENTRO CONGRESSI PALAZZO DELLE STELLINE

UNIVERSITY OF GOTHENBURG

Nuovi farmaci in sviluppo per la BPCO

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Professor of Respiratory and Internal Medicine, University of Modena and Reggio Emilia, (-2016)
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