Overall perspective & scientific basis of Palliative Care in patients with Advanced COPD

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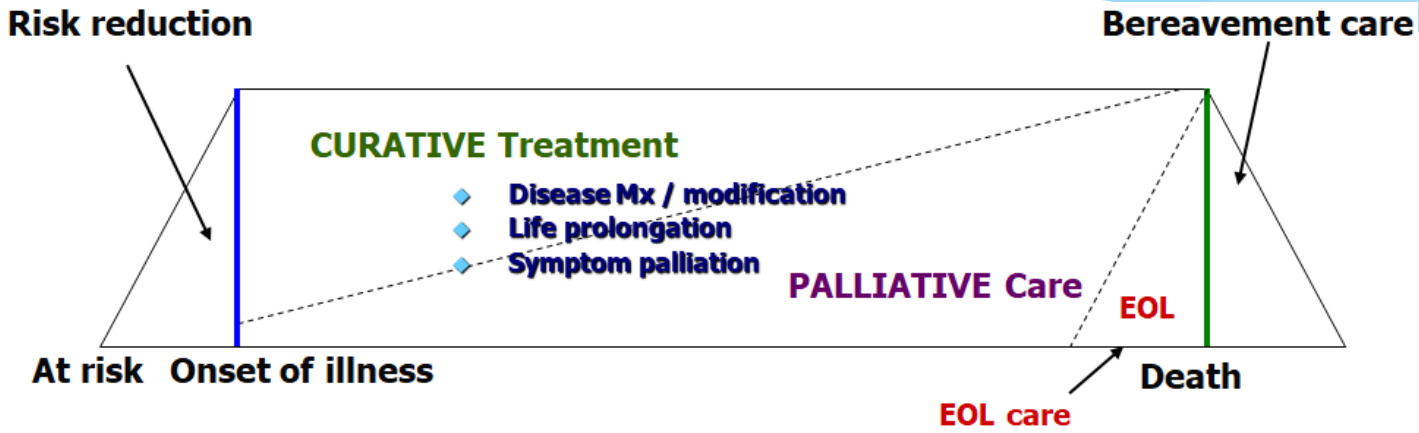
Burden of Advanced COPD

* COPD is currently the **4th** leading cause of death in the world (GOLD guideline 2017)
* "Chronic lower respiratory diseases" ranked **6th** as leading cause of death in Hong Kong 2015 (1660 deaths)
* significant symptoms, impaired quality of life (QOL)
* worse QOL than patients with advanced lung cancer (Gore, 2000); and similar findings were reported in recent study (Javadzadeh, 2015)

Palliative Care

* **World Health Organization definition of palliative care**
  * *focus on optimising quality of life for people with progressive life-limiting illness*
  * *through impeccable assessment of symptoms and other concerns throughout their illness*
  * *care of the dying and family support*
* **This approach works in response to people's needs rather than being limited either by diagnosis or prognosis**
* **Can be initiated at the time it is recognized that the person has a life-limiting illness**

Palliative care and chronic illness



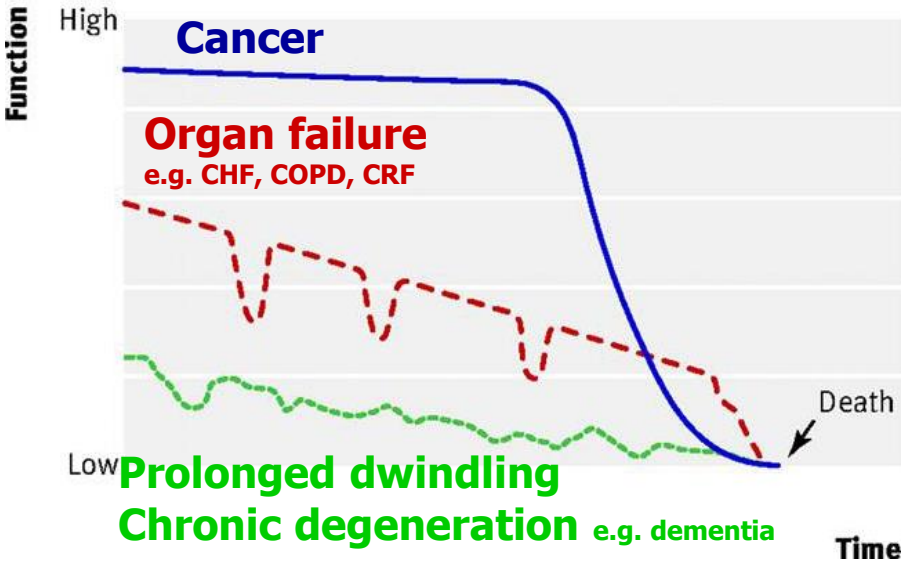
Trajectory of illness and health care needs (adapted from WHO)

Supporting family throughout including bereavement

Palliative care is applicable early in the course of disease, in conjunction with therapies that are intended to prolong life, & includes investigations needed to understand & manage distressing clinical complications. (WHO)

Disease trajectory (COPD)

Lynn J et al 2003



- tend to have intermittent exacerbations
- characterized by uncertainty, predicting death is more difficult
- palliative care based on needs & not diagnosis
- Trigger factors & referral criteria assist referrals

Palliative care for patients with advanced COPD is **CHALLENGING**

* **Characteristics of Patients with advanced COPD**
  * *progress & life-limiting disease with worsening of dyspnea during disease progression*
  * *deterioration in function & QOL*
    * *Similar or worse than advanced cancer (Gore 2000; Pang 2005)*
  * *increasing dependency on caregivers*
  * *repeated emergency admissions*
  * *aggressive life-sustaining treatment with assisted ventilation*
  * *limited access to specialist palliative care service*
  * *late address on advance care planning*

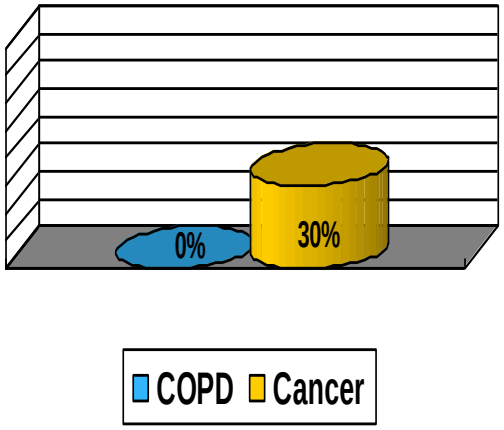
Example of referral criteria

Stuart B 1999

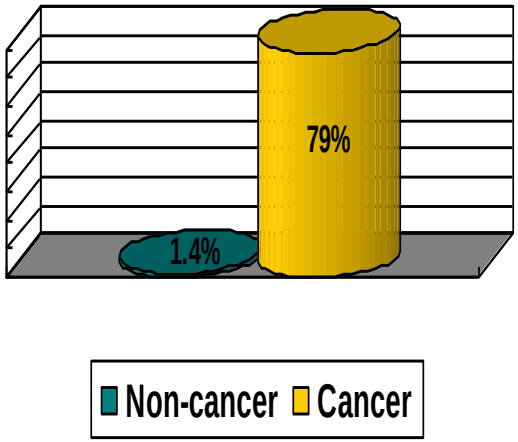
* **Medicare Hospice Eligibility (US)**
  * *Disabling dyspnea at rest, unresponsive to bronchodilators, resulting in decreased functional capacity*
  * *Progression evidenced by increasing hospitalizations and/or respiratory failure*
  * *Hypoxaemia at rest (pO2 <55 mmHg or oxygen saturation <88%) or hypercapnia (pCO2 >50 mmHg)*

Limited Access to Palliative Care

Gore JM, 2000



Lau KS, 2010



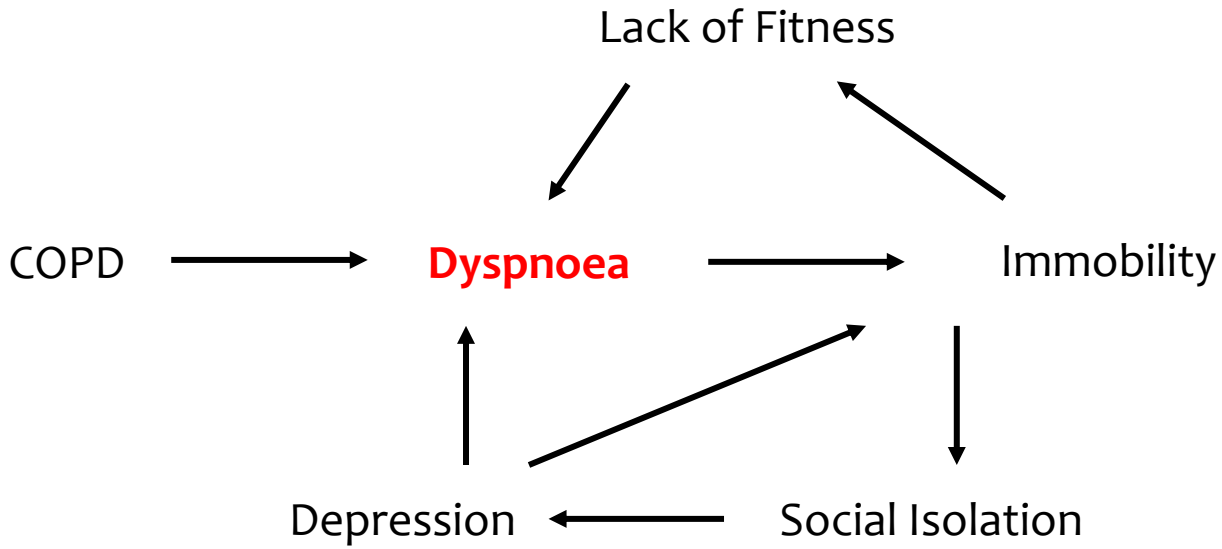
COPD patients had a much lower chance to receive palliative care service despite their needs

Chou WC et al 2013
A local Taiwan study: only 18% advanced COPD received palliative care

Advanced COPD Symptom prevalence

Symptoms	Janssen 2008	Ng 2011
Dyspnea	56-98%	87.5%
Tiredness	49-96%	76.8%
Dry Mouth	59-67%	73.2%
Cough	59-80%	60.7%
Insomnia	55-77%	53.6%
Pain	21-77%	50%
Urinary Disturbance	-	50%
Anorexia	11-81%	48.2%
Depression	17-77%	44.6%
Constipation	27-44%	42.9%
Anxiety	32-57%	37.5%

The Cycle of Physical, Social, and Psychological Consequences of COPD



Symptoms & treatment received in the last year of life

Elkington H et al 2005

	n (%)
Symptoms all the time/sometimes	
Breathlessness	200 (98)
Cough	163 (80)
Weakness/fatigue	195 (96)
Appetite	166 (81)
Hard to sleep at night	160 (77)
Low mood	158 (77)
Anxiety/panic attacks	109 (53)
Pain	147 (72)
Treatment received for symptoms present all the time/sometimes	
Breathlessness	166 (85)
Hard to sleep at night	30 (19)
Low mood	29 (18)
Anxiety/panic attacks	18 (17)
Pain	97 (66)
Symptoms relieved by treatment 'a lot' or 'some'[a]	
Breathlessness	94 (57)
Difficulty sleeping	18 (58)
Low mood	12 (41)
Anxiety/panic attacks	10 (56)
Pain[a]	21 (21)

In the last year of life, Breathless:

- A common symptom
- Treatment – mostly given
- Response – not satisfactory

Care for patients with advanced COPD

- **requires a holistic approach to address their disease management**
  - *minimize their physical, psychosocial and spiritual distress*
  - *maximize their QOL via rehabilitation and palliation*
  - *care for their dying journey*
- **palliation and care at the end-of-life an integral component of care**
  - *Strongly endorses the concept that palliative care should be available to patients at all stages of illness and should be individualized based on the needs and preferences of the patient and the patient's family* (ATS Clinical Policy Statement, AJRCCM 2008)
  - *Palliative approaches are effective in controlling symptoms in advanced COPD* (GOLD guideline, 2017)

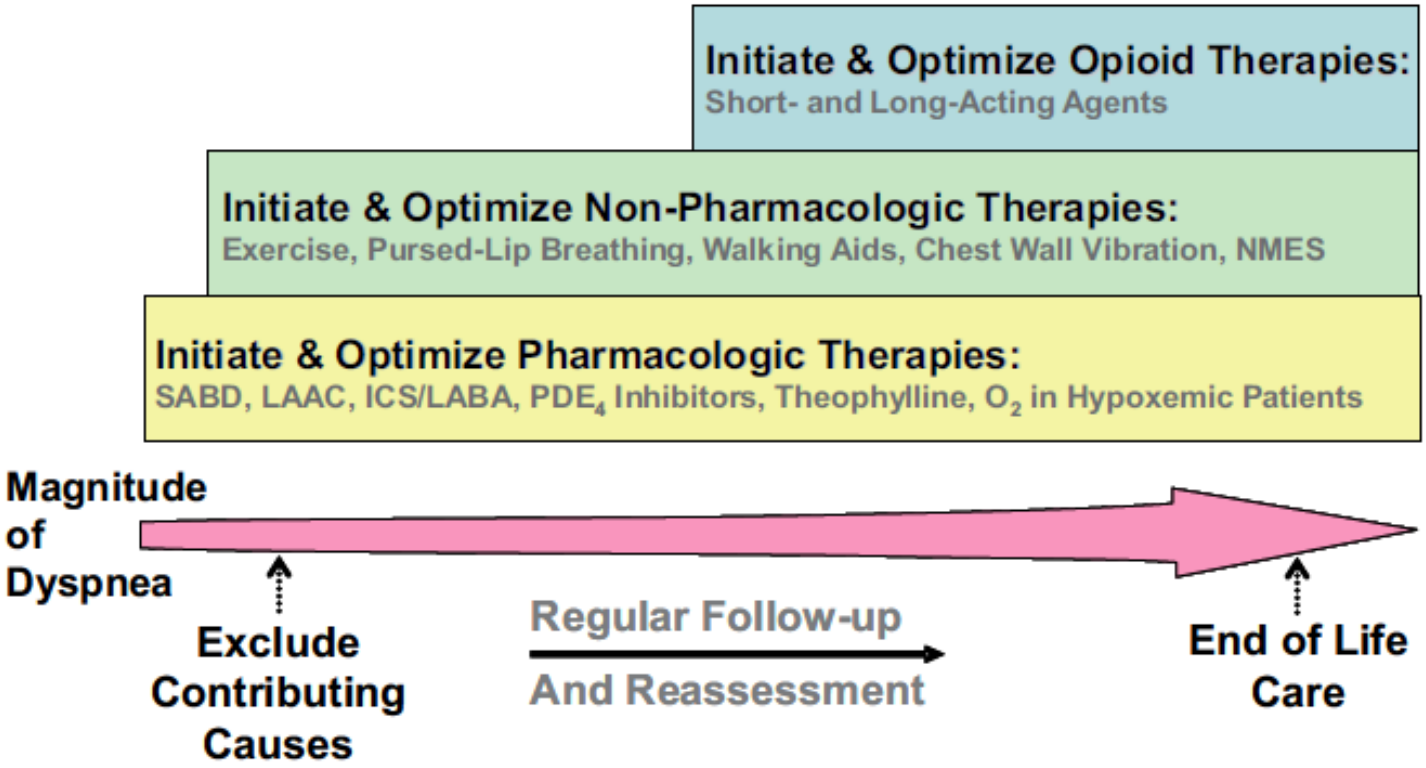
Triple approach on dyspnea in advanced COPD

Mularski and Rocker 2015

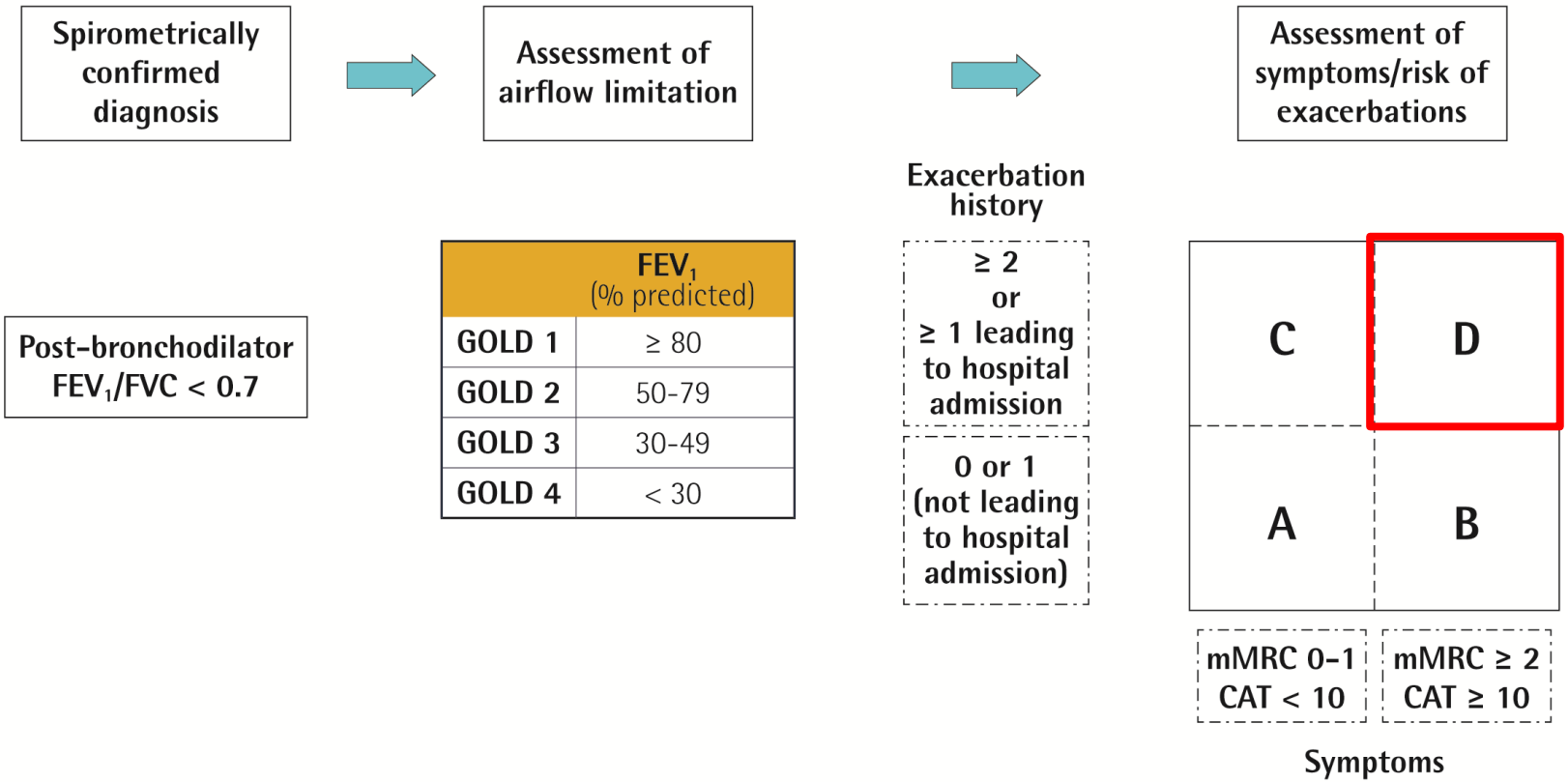
1. aggressive, appropriate pharmacologic therapies for disease management
2. non-pharmacological therapies including pulmonary rehabilitation & breathing/relaxation techniques
3. Opioids recommended as necessary adjunctive therapy

Managing dyspnea in patients with advanced COPD (Canadian Thoracic Society Guideline)

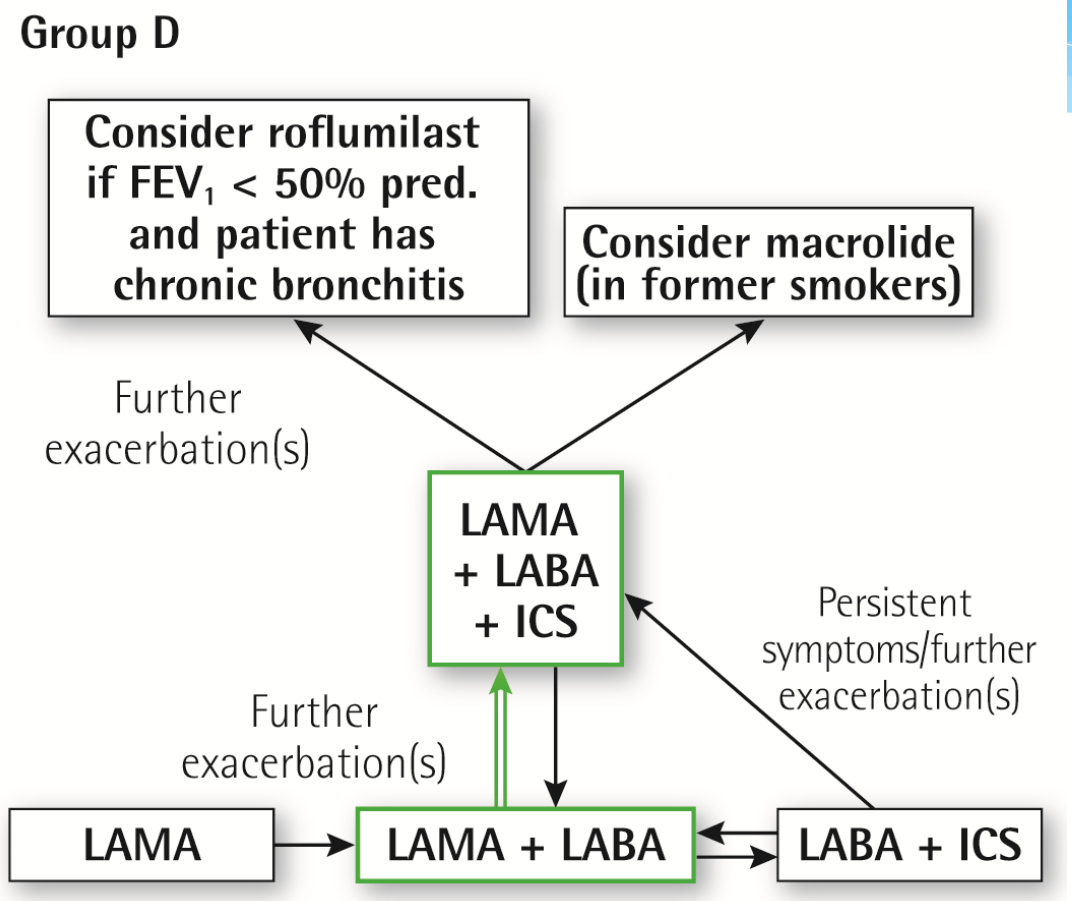
Marciniuk DD et al Can Respir J 2011



Refined ABCD assessment tool (GOLD guideline 2017)



Pharmacologic treatment algorithm (GOLD Guideline 2017)



Non-pharmacological managements on dyspnea

* **Bausewein C et al. Cochrane review 2011**
  * *Chest wall vibration; Neuroelectrical muscle stimulation (high strength of evidence)*
  * *Walking aids; Breathing training (moderate strength of evidence)*
* **RCT on an integrated palliative and respiratory care service of Breathlessness Support Service (BSS)**
  * *reported positive result of the combination of non-pharmacological treatments for patients with advanced disease and refractory breathlessness (Higginson, 2014)*
* **RCT of a Breathlessness Intervention Service (BIS)**
  * *reported cost-effective (Farquhar, 2016)*

Use of supplemental oxygen

* **Usefulness** of supplemental oxygen for **hypoxaemic patients** well-documented
* **No additional symptomatic benefit** of oxygen over room air for relieving refractory dyspnea related to life-limiting illness in **non-hypoxaemic patients** *(Abernethy AP et al. Lancet. 2010)*
* **Routine application** of supplemental oxygen to patients who are near death is **not supported**
  * No support for initiation or continuation of oxygen therapy when patient is comfortable and near death *(Campbell ML et al. J Pain Symptom Manage. 2013)*
* Oxygen should be given only to patients with moderate to severe levels of breathlessness and hypoxemia
  * Should be withdrawn if patient does not report relief of breathlessness within few days *(Ekström MP et al BMJ 2015)*

oxygen vs room air for relieving refractory dyspnea in non-hypoxaemic patients

Abernethy AP et al Lancet 2010

	Oxygen	Medical Air	Overall
Change in morning dyspnea (Baseline to Day 6)			
Absolute change (95% CI)	-0.9 (-1.3,0.5)	-0.7 (-1.2, 0.2)	-0.8 (-1.1, -0.5)
Relative change	-20%	-15%	-18%
Change in evening dyspnea (Baseline to Day 6)			
Absolute change (95% CI)	-0.3 (-0.7, 0.1)	-0.5 (-0.9, -0.1)	-0.4 (-0.7, -0.1)
Relative change	-7%	-11%	-9%
Change in global QOL (Baseline to Day 6)			
Absolute change (95% CI)	0.7 (0.4, 1.0)	0.7 (0.4, 1.0)	0.7 (0.5, 0.9)
Relative change	11%	12%	12%

239 patients (COPD 64%)

No significant difference between oxygen & room air

Use of Opioids

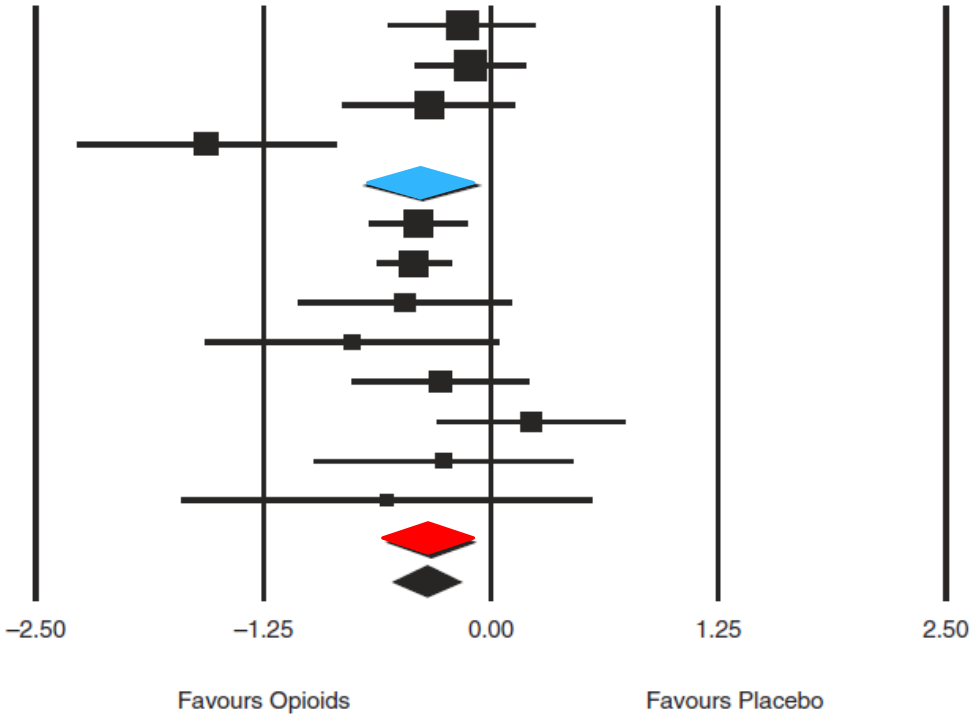
* **Pharmacological treatment of using opioids on dyspnea was recently reviewed** (Ekstrom M et al Annals ATS 2015; Cochrane 2016)
  * *Opioids reduced breathlessness in COPD with the strongest evidence for systemic therapy*
  * *No effects on exercise capacity*
  * *No serious adverse effects (hospitalizations, respiratory depression, or CO2 retention) reported*

* **Possible mechanisms**
  * *Effect seems to be mediated mainly by central reduction of ventilator demand and altered perception of breathlessness*

Effects of opioids on dyspnea

Ekstrom M et al Annals ATS 2015

Study name	Comparison	Std diff in means	Lower limit	Upper limit	Relative weight
Jankelson, 1997	Nebulized	−0.16	−0.56	0.24	27.7
Noseda, 1997	Nebulized	−0.11	−0.41	0.18	34.4
Jensen, 2012	Nebulized	−0.35	−0.82	0.12	23.6
Shorati, 2012	Nebulized	−1.56	−2.27	−0.85	14.3
		−0.39	−0.71	−0.07	
Abernethy, 2003	Systemic	−0.40	−0.67	−0.14	21.0
Johnson, 1983	Systemic	−0.43	−0.63	−0.22	23.5
Poole, 1998	Systemic	−0.47	−1.05	0.11	10.6
Woodcock, 1981	Systemic	−0.76	−1.56	0.04	6.9
Woodcock, 1982	Systemic	−0.28	−0.76	0.20	13.4
Eiser, 1991 (1)	Systemic	0.22	−0.29	0.72	12.6
Eiser, 1991 (2)	Systemic	−0.26	−0.97	0.45	8.1
Light, 1996	Systemic	−0.57	−1.70	0.56	3.9
		−0.34	−0.58	−0.10	
		−0.36	−0.55	−0.17	



- Strongest evidence for systemic therapy
- Pooled effect nebulized opioids driven by outlier Shohrati

Use of Opioids

* **Regular, low dose, oral morphine (up to 30mg/day) should be considered for dyspnea in severe COPD persists despite best medical management**
* **Consistent with international guidelines**
  * *NICE guideline, Canadian Thoracic Society, Global Initiative for COPD*
* **Initiated at a low dose regularly, titrated upward over days and weeks, balancing beneficial & adverse effects**
* **Adequate FU and reassessment**

Advance Care Planning (ACP)

* **An important integral component of care for patient with advanced COPD**
  * *Addressing patient's preferences on future life-sustaining treatments (e.g. DNACPR, Intubation, Non-invasive ventilation)*
  * *Taking into consideration of patients' benefit and burden*
  * *Relevance in care at end-of-life and care of dying*

* **A recent RCT showed that a nurse-led, facilitated ACP has increased the uptake of ACP (Sinclair, 2017)**

Advance care planning uptake among patients with severe lung disease

Sinclair C et al BMJ Open 2017

* **A multicentre RCT**
* **149 participants**
  * *CA lung, COPD or ILD*
* **ACP discussion (Nurse facilitators)**
  * *prompted further discussions (doctors; loved ones)*
  * *substitute medical decision-maker (SDM)*
  * *advance directive (AD)*

* **Participants**
  * *discuss illness & prognosis*
  * *goals / values (future medical care)*
  * *Communicated with loved ones & doctors*

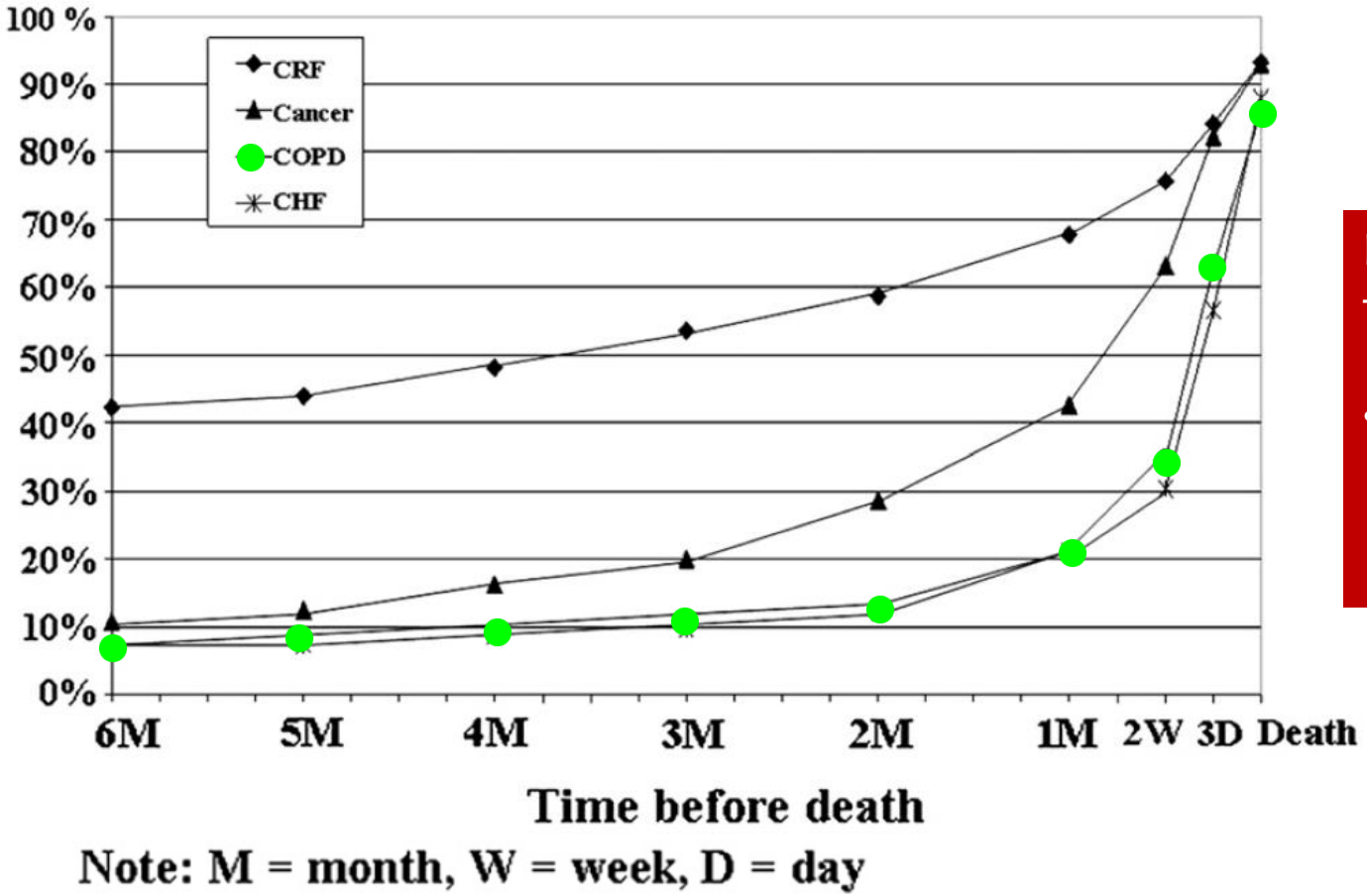
Advance care planning uptake among patients with severe lung disease

Sinclair C et al BMJ Open 2017

* **Results at 6 months**
  * formal ACP uptake was higher (p<0.001)
    * *intervention arm (51%) vs usual care (14%)*
  * ACP discussions with doctors were higher (p<0.005)
    * *intervention arm (72%) vs usual care (47%)*
  * Increased symptom burden and preference for the intervention predicted later ACP uptake
  * Social support
    * *positively associated with ACP discussion with loved ones*
    * *negatively associated with discussion with doctors*

Cumulative percentage of ACP documentation

Lau KS et al J Pain Symptom Manage 2010



Late ACP discussion for COPD patients

- > 25% patients had their 1st documented discussion within 3 days before death

Non-invasive Ventilation

Garpestad E et al Chest 2007
Curtis JR et al CCM 2007

* **May be useful even in Palliative Setting with good survival**
* **Consider benefit and burden of treatment**
  * *Symptom improvement vs Ventilation Discomfort*
* **Importance of advance care planning with close & effective communication between caregivers, patient & family on the goals of treatment**

NIV in DNI patients
Long term survival

* **55% in 6 months; 30% in 1 yr**
  * *Chu et al CCM 2004 (37 COPD pts)*
* **15% in 6 months**
  * *Fernandez et al Intens Care Med 2007 (34 pts)*
* **16% in 6 months; 16% in 1 yr; 11% in 5 yrs**
  * *Bulow et al Acta Anesth Scand 2009 (38 pts)*

How Palliative Care may help

Chou WC et al 2013

* **Comparing care at end-of-life in hospitalized patients with COPD with and without palliative care**
  * *Retrospective review*
  * *Patients died in Saint Paul's Hospital, Taoyuan, Taiwan Sept 2007 - Dec 2009*
  * *91 patients enrolled*
  * *Patients received PC service*
    * ***Less death in ICU***
    * ***Less invasive ventilation***
    * ***Less CPR***
    * ***More signed DNR form***

Collaborative Model

* **The importance of collaboration between palliative and respiratory medicine recognised in international guidance**
  * *An official American Thoracic Society clinic policy statement: palliative care for patients with respiratory diseases & critical illnesses (AJRCCM 2008)*
  * *Dept of Health Western Australia COPD Model of Care (2012)*
  * *Towards Integration of palliative care in patients with CHF & COPD. Systemic literature review of European guidelines and pathways. (Siouta N et al BMC Palliat Care 2016)*

Summary

* Significant burden of advanced COPD
* Limited access to palliative care service
* Palliative care can be initiated early based on patients' need
* Dyspnea is an important symptom, difficult to treat and with significant consequences
* Triple approach: disease Mx, non-pharmacological Mx, opioids
* ACP an integral component of care
* Coordinated service can be provided under collaborative model (Respiratory Specialists & PC Specialists)

Thank you!