Multimorbidity

An IPCRG initiative
Multimorbidity management in COPD

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Breathing and feeling well through universal access to right care

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Multimorbidity Case Studies

COPD and palpitations

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About these slides

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- There is a general introduction to multimorbidity management in COPD, followed by a case study

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What you will learn

- Why we are focused on multimorbidity
- What multimorbidity means in people with chronic respiratory disease
- How we can improve the management of the patient with chronic respiratory disease and multiple comorbid conditions
- How you can be part of that change

Multimorbidity in COPD (I)

- Patients with COPD typically also present with multiple comorbid conditions which may require long-term management alongside their COPD
- An additional challenge is that concomitant conditions can be overlooked because signs and symptoms overlap with those associated with COPD
- Up to 80% of patients with COPD will have at least one comorbid condition of clinical relevance, half of them will have three or more
- Comorbid conditions are more frequent in women than men and increase in prevalence with worsening COPD severity

COPD, chronic obstructive respiratory disease

IPCRG. Desktop Helper No. 10. Rational use of inhaled medications for the patient with COPD and multiple comorbid conditions: Guidance for primary care. Available at: https://www.ipcrg.org/dth10

Multimorbidity in COPD (II)

- Comorbidities often appear in clusters, which suggests common risk factors (e.g. smoking, inactivity), shared underlying pathobiological mechanisms (e.g. accelerated ageing), and side effects of COPD treatment

- Common comorbidities in patients with COPD include:

Cardiovascular diseases	Metabolic syndrome
Muscle weakness	Diabetes
Osteoporosis	Gastroesophageal reflux
Anxiety and depression	Bronchiectasis
Lung cancer	Obstructive sleep apnoea

Managing the multimorbid patient with COPD (I)

- The management of individual patients with COPD and multimorbidities is often complex requiring the simultaneous application of several disease-specific treatment guidelines

- These guidelines are not always well aligned with regard to treatment recommendations in the face of multimorbidity therefore a holistic approach is of particular importance for patients with COPD
  - Primary care physicians should seek to undertake at least annual (re)assessment and treatment adjustment for patients with COPD

- Emergence of multimorbidity should be regarded as a signal and call to action to undertake a review of COPD treatment with a focus on the interface between symptoms of comorbid disease and side effects of medication

- In this set of slides we focus on COPD and the whole patient context. It is important to engage with the patient about what problem (symptoms/disease) concerns them most – both worries them and causes most daily limitations, what is their perception of their problems and what is most important to them. As GPs, we deal with them all, and do need to prioritise in line with the patient. Having said that, and reiterating as a general principle, this set is about COPD, but it's important not to lose sight of the whole patient context.

Managing the multimorbid patient with COPD (II)

- For patients with COPD, multimorbidity is associated with:
  - A high level of polypharmacy and an increased risk for adverse drug reactions and interactions
  - An increased risk of hospitalisation
  - An increased risk of premature death

- Polypharmacy is of particular concern when drugs with potential for similar adverse reactions are combined and when comorbid conditions and adverse reactions to treatment look alike

Managing the multimorbid patient with COPD (III)

- According to GOLD 2020, in general, multimorbidity should not delay the treatment of COPD and comorbidities should be managed according to usual standards
- Attention should be directed to ensure treatment simplicity and to minimise polypharmacy

The Global Initiative for Chronic Obstructive Lung Disease (GOLD) 2020. Available at: https://goldcopd.org/

Improving the management of multimorbid COPD patients in primary care

- Optimise the treatment regimen according to GOLD classification (GOLD 2020) and assess and treat comorbidities[1,2]

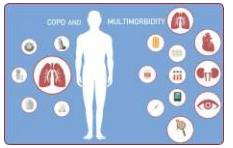
- For patients with multimorbidities undertake a review of COPD treatment with a focus on the interface between symptoms of comorbid disease and side effects of medication[1]

- In addition, think carefully about the indications for ICS use before prescribing. Use in line with guideline recommendations and note the latest IPCRG advice on appropriate use of ICS and guidance on ICS withdrawal[1]

ICS, inhaled corticosteroid

1. IPCRG. Desktop Helper No. 10. Rational use of inhaled medications for the patient with COPD and multiple comorbid conditions: Guidance for primary care. Available at: https://www.ipcrg.org/dth10; 2. The Global Initiative for Chronic Obstructive Lung Disease (GOLD) 2020. Available at: https://goldcopd.org/.

Additional essential action points



1. Increase awareness of COPD multimorbidity and screen and monitor patients for the most common comorbidities
2. Ensure at least yearly patient (re)assessment and treatment adjustment in the primary care setting, including stopping of inappropriate medication. Don't forget lung cancer
3. Review inhalation technique and adherence to medication
4. Empower multimorbid patients with COPD and caregivers to help them cope with potentially overwhelming amounts of information and associated depression and anxiety
5. Carefully evaluate the indication before initiating ICS treatment
6. Closely monitor for cardiac rhythm disorders, including atrial fibrillation, when initiating patients on a LABA
7. Monitor for emergent urinary symptoms when initiating patients with chronic kidney or prostate disease on LAMA

With regard to ongoing ICS treatment, consider

- **Asthma:** ICS treatment must be continued
- **Diabetes:** reconsider if ICS treatment is needed; if ICS is continued, close follow up, glucose monitoring and titration of antidiabetic treatment are required
- **Osteoporosis:** reconsider if ICS treatment is needed; if ICS is continued, close follow up for loss of bone mineral density and risk of fractures is required. Screening for osteopenia or osteoporosis is recommended in patients receiving high dose of ICS or low to medium dose ICS with frequent use of oral corticosteroids
- **Infections (pneumonia or tuberculosis):** consider withdrawal of ICS and maximize bronchodilation

LABA, long-acting beta agonist; LAMA, long-acting muscarinic antagonist

Our aim

- To use a case study to teach how to identify and manage the multimorbidity of people with COPD

The patient

- 60 years old
- Married
- Business school
- Accountant in a small business
- He smoked from the age of 16 years to 45 years
- He does not exercise regularly

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General medical history

- At the age of 50 years he presented with 3 lung infections
  - Treated once by his family doctor and twice in an emergency room
- Otherwise healthy
- As a child he had “bronchitis” but not after his 12th birthday
- No particular disease runs in the family

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Respiratory history

- Appointment at doctor's office one year ago
- Clinical examination:
  - Normal findings on lungs
  - Normal heartbeat
  - Blood pressure 155/85 mmHg
  - Weight 79 kg

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Respiratory history

- Spirometry taken at doctors office: Moderate obstruction
  - Pre test: FEV_1/FVC ratio (0.61) FEV_1 2.17L (60% exp). Obstructive
  - Post test: FEV_1/FVC ratio (0.64) FEV_1 2.28L (65% exp) Change 8%; Reversibility test negative
- CCQ score: Total score 1.8, symptoms 1.8, mental state 0, functional status 1.75

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CCQ, Clinical COPD Questionnaire; FEV_1, forced expiratory volume in 1 second; FVC, forced vital capacity

The CCQ

CLINICAL COPD QUESTIONNAIRE

Please **circle** the number of the response that best describes how you have been feeling during the **past week**.
(Only **one** response for each question)

On average, **during the past week**, how often did you feel:	never	hardly ever	a few times	several times	many times	a great many times	almost all the time
1. Short of breath **at rest**?	0	1	2	3	4	5	6
2. Short of breath **doing physical activities**?	0	1	2	3	4	5	6
3. **Concerned** about getting a cold or your breathing getting worse?	0	1	2	3	4	5	6
4. **Depressed (down)** because of your breathing problems?	0	1	2	3	4	5	6
In general, **during the past week**, how much of the time:							
5. Did you **cough**?	0	1	2	3	4	5	6
6. Did you **produce phlegm**?	0	1	2	3	4	5	6
On average, **during the past week**, how limited were you in these activities **because of your breathing problems**:	not limited at all	very slightly limited	slightly limited	moderately limited	very limited	extremely limited	totally limited (or unable to do
7. **Strenuous physical activities** (such as climbing stairs, hurrying, doing sports)?	0	1	2	3	4	5	6
8. **Moderate physical activities** (such as walking, housework, carrying things)?	0	1	2	3	4	5	6
9. **Daily activities at home** (such as dressing, washing yourself)?	0	1	2	3	4	5	6
10. **Social activities** (such as talking, being with children, visiting friends/ relatives)?	0	1	2	3	4	5	6

- GOLD Guideline recommended
- 10 items
- 2 minutes to complete
- Domains
  - Symptoms
  - Mental status
  - Functional status
- MCID 0.4
- >80 Languages
- www.ccq.nl

MCID, minimum clinically important difference

The Global Initiative for Chronic Obstructive Lung Disease (GOLD) 2020. Available at: https://goldcopd.org/

Initial treatment

- Started ICS/LABA fixed combination twice daily.
- SABA as needed
- Started exercising with focus on completing half marathon, and lost 10 kg of weight
- Highly motivated
- Failed to meet for planned follow up

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SABA, short-acting beta agonist

Clinical considerations

- One year has passed, contacts office with increasing dyspnoea
- Has had increasing problems during training for the last 3–4 months
  - Feels like he has no effect of his training for the marathon
  - Fatigue
  - Increased use of SABA to 4 – 6 times a day with no effect at all
  - Almost feeling worse when taking SABA sometimes
  - Starts getting heavy heartbeats, but thinks it is due to increase in use of SABA
- Patients file reveals two ER contacts with course of antibiotics for «bronchitis» in the last 12 months

ER, emergency room

Clinical considerations

- Questions to consider
  - Do we need any more examinations?
  - What are the reasons for the increasing dyspnoea?
  - Is the medication correct, is he using inhaler correctly and what is his adherence?

Clinical considerations

- Confirm if the patient manages his/her condition appropriately
- Patient could be overusing SABA
- It is unclear if he still uses his controller medication

Evaluations and tests

- Spirometry improved since last contact 2.5 years ago
  - FEV_1 74% predicted (was 65%)
- ECG shows AF
  - Heart rate 80/minute
  - Blood Pressure 145/70 mmHg
- Laboratory:
  - Haemoglobin: 8.9
  - Blood eosinophil count: 0.3 10^9/L

AF, atrial fibrillation; ECG, electrocardiograph

Additional essential action points

- All points are of importance, but point 6 should be particularly considered
- Closely monitor for cardiac rhythm disorders, including AF, when initiating patients on a LABA

Indicators for multimorbidity

- Patient is referred to hospital for treatment of AF, it spontaneously returns to regular rhythm

- Low CHADSVASC score (1)
  - No need for antithrombotic treatment*

* This might be different in your local situation
https://www.mdcalc.com/cha2ds2-vasc-score-atrial-fibrillation-stroke-risk

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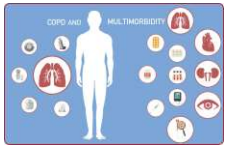

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A new plan

- Management plan
- This patient showed a difficult initial diagnosis believed to be COPD, later regarded as both asthma and COPD
  - o AF mistaken for worsening lung disease
- Antihypertensive medication, avoid unselective beta blocking medication in this patient
- Use of inhaled medication to prevent relapse of AF, ICS+LAMA
  - o Avoid use of SABA as reliever medication

A new medication plan

- Given the improvement of lung function using ICS/LABA, the blood eosinophils of 0.3 and the “bronchitis attacks” ICS is likely to show benefit in his case
- Given the AF, the adrenergic effect of both SABA and LABA should be looked at with caution
- Given the need for bronchodilatation, LAMA would be the preferred choice (between LABA and LAMA)

- But the combination of ICS and LAMA does not exist: Mixing of devices leads to worse inhalation technique

- A pragmatic choice would be to make sure the ICS/LABA is used with low dose ICS, a LAMA could be added for bronchodilatation and as rescue medication the SABA should be changed to SAMA
  - If he still continues to have palpitations, or AF, use two inhalers, an ICS and a LAMA is a separate, similar device
  - Proper inhalation technique education could be considered

Other recommendations

- Consider vaccinations (influenza, others, depending on local guidelines)
- Check inhalation technique

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Thank you!