



# QUICK QUERIES

Topical Questions, Sound Answers



## *COPD in Primary Care: A Case-Based Review*



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The prevalence of chronic obstructive lung disease (COPD) is increasing and its economic impact is significant. There is recognition that COPD is under-diagnosed in the community. The major risk factor for COPD is cigarette smoking and thus the most important factor to address is the implementation of no smoking interventions among all cigarette smokers. Although prevention is ideal, unfortunately there is a large cohort of current smokers, at significant risk for the development of COPD. Thus, the earlier recognition of COPD among smokers is to be encouraged. The management of COPD has recently been comprehensively reviewed both in Canada and internationally.

*The prevalence of COPD is increasing and its economic impact is significant.*

### ► *What are your next steps for Monica?*

Monica has a significant smoking history and a recent change in symptoms and you order a chest radiograph which shows some hyperinflation but no mass lesion.

You order spirometry but there is an eight week waiting list at your local pulmonary function

### Meet Monica

A 47-year-old woman presents to your practice with a history of smoking for 29 years. She reports a 5 year history of a "smoker's cough."

She leads a sedentary lifestyle and has not really noticed a significant change in her exercise capacity, although she does remark she finds it difficult to keep up with her grandchildren.

She normally coughs up some early morning clear sputum. She had a recent flu which has been slow to clear. She now reports that the sputum is mucopurulent but she has no fever.

There is no history of seasonal allergies or wheeze to suggest asthma. Clinically, there is no clubbing and auscultation of the chest is unremarkable.

laboratory. You prescribe ipratropium bromide 2 inhalations to be taken four times daily as needed and you suggest she takes it prior to playing with her grandchildren. You counsel her to stop smoking and advise her of a range of interventions including nicotine replacement and specific therapies including varenicline and bupropion that are available to help with smoking cessation. You advise her with regard to immunizations with influenza and pneumococcal vaccines.

Monica returns three months later and you have received her spirometry which showed a reduced forced expiratory volume after 1 second (FEV1)/forced vital capacity (FVC) ratio, as well as an absolute reduction in FEV1 at 55%

predicted. She has found the ipratropium bromide inhaler to help her when she takes it pre-exercise. She declines any smoking cessation intervention.

### ► *What happened three years later?*

In three years, Monica returns and now reports increasing symptoms of shortness of breath which are only partially relieved by her inhaler. She continues to smoke but has reduced this to half a pack a day. She reports a history of episodes of bronchitis in the last two years where she has gone to a couple of walk in clinics and has required a couple of courses of antibiotics. Clinically there are no new findings and you prescribe tiotropium bromide 18 mcg q.d. You repeat the spirometry and the FEV1 has declined to 40% of predicted. You repeat the recommendations to stop smoking and advise a course of varenicline. Because of the decline in FEV1 and pattern of exacerbations, you refer her to the local COPD clinic.

*Based on Canadian data, unusually, the FP orders spirometry early in the patient assessment.*

You have recently attended a CME event and understand that pulmonary rehabilitation is likely of use for Monica but you are unsure if it is available locally; however, you suggest the patient call the Lung Association regarding smoking cessation and also ask regarding the pulmonary rehabilitation when she sees the local Respiratory Physician.



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### ► *What did the Respiratory Physician have to say?*

Three months later, you receive a letter from the Respiratory Physician confirming the level of air-flow obstruction and recommending the addition of a long-acting  $\beta$ -agonist salmeterol and an inhaled corticosteroid fluticasone. He also confirms that the hospital recently has been given funding for a pilot COPD rehabilitation program and feels the patient would be a good candidate. He also lets you know he has given your patient an action plan to be implemented in the event of a future exacerbation.

This plan consists of taking a course of doxycycline and prednisone 40 mgs p.o. q.d. for 10 days in the event of there being:


- an increase in sputum volume and purulence,
- fever and
- shortness of breath.

He also reports he has advised the patient to see you if she implements the action plan and if she is very short of breath and concerned to go to the ED.

Six months later, you are on call in the local ED and your patient comes in and reports a five day history of increasing shortness of breath and a productive cough with purulent sputum. She reports having lost the prescription for the action plan. A chest radiograph shows no pneumonia and spirometry shows the FEV1 has declined to 38% of predicted. You give the patient repeated treatments of inhaled bronchodilators and a 50 mg prednisone tablet. After two hours, Monica feels much improved and you discharge her to be seen in follow-up in 10 days time with new prescription for a course of prednisone and antibiotics.

### ► *What are some other comments about Monica?*

Monica is representative of a typical COPD patient who presents with moderate airflow obstruction and symptoms that are not overly intrusive, but who



unfortunately continues to smoke. Based on Canadian data, unusually, the FP orders spirometry early in the patient assessment. Based on her airflow obstruction and in particular, progressive symptoms despite a short-acting reliever, he recognizes the proven benefit of introducing a long-acting anticholinergic and also identifies to the patient newer and effective smoking cessation strategies. Unfortunately, the patient is not responsive to the opportunity to attempt to stop smoking. The trigger point for the addition of a combination inhaler in this instance is the occurrence of two exacerbations requiring antibiotics and the ongoing decline in lung function. There is level 1 evidence of the efficacy of the addition of a combination inhaler in subjects with a history of an exacerbation and who have an FEV1 < 50% of predicted.

In a recently published large COPD trial, a potential association has been found between the use of inhaled corticosteroids and the risk of developing pneumonia. This risk has been identified in a post hoc analysis but given the clear benefit in terms of preventing exacerbations and also a mortality effect, there appears to be good evidence in this case for the addition of a combination inhaler. Unfortunately the patient does not access the very effective medications which have shown a very positive impact on smoking cessation.

*Greater use of spirometry will help to identify patients with COPD at an earlier stage.*

More recently, varenicline has been shown to increase the cessation rate when compared to other smoking cessation strategies including counselling. The access to pulmonary rehabilitation in the local community is unusual as there has been shown to be a significant gap between need for pulmonary

rehabilitation and its availability across Canada. Pulmonary rehabilitation, especially with the inclusion of patient management strategies for around the time of a COPD exacerbation has been shown to be highly effective in reducing healthcare utilization, as well as a general improvement in health outcomes in terms of quality of life and exercise capacity.

### ► *What are some conclusions about COPD?*

COPD is underrecognized in Canada. Greater use of spirometry will help to identify patients with COPD at an earlier stage. Unlike in the past, there are now effective pharmacotherapies available which have the potential to modify the risk of COPD exacerbations, as well as mortality. In addition, the role of pulmonary rehabilitation and the need for its greater availability has also been recognized.

In summary, COPD, long considered a disease with limited therapeutic options, can now be more effectively treated with the addition of:

- appropriate pharmacotherapy,
- referral to specialist care when patients experience frequent exacerbations, as well as for
- pulmonary rehabilitation.

*cme*

#### Resources

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