

COPD

A public health problem requiring attention

Joseph M Cacciottolo MD DSc
 Maria Cordina B Pharm (Hons) PhD (QUB)

GOLD Launch Leaders - Malta

Email: joseph.cacciottolo@um.edu.mt
 maria.cordina@um.edu.mt

Chronic obstructive pulmonary disease (COPD) is currently a major cause of morbidity and mortality throughout the world. The disease responsible for an estimated 2.75 million deaths each year, ranking it as the fourth leading cause of death. Recent data published from the Burden of Obstructive Lung Disease Study estimates that at least 10% of the world's population over 40 years of age may be suffering from COPD.

Data also indicates that COPD is three times more common than previously estimated. COPD therefore poses a significant public health problem. While other chronic diseases, such as cardiovascular disease, are on the decrease, COPD is on the increase.

The Global Initiative for Chronic Obstructive Lung Disease, GOLD, of which Malta forms a part, is conducted in collaboration with the US National Heart, Lung, and Blood Institute (NHLBI) and the World Health Organisation (WHO). The overall aim of GOLD is to increase awareness of COPD and to decrease morbidity and mortality from this disease.

Diagnosing COPD

Chronic obstructive pulmonary disease is characterised by airflow limitation that is not completely reversible. This airflow obstruction is progressive and is associated with an abnormal inflammatory response of the lungs to noxious particles or gases such as cigarette smoke, occupational dusts and chemicals, environmental tobacco smoke and indoor/outdoor air pollution. Most patients present with cough, which either precedes the onset of breathlessness or appears concurrently with it. Chronic cough and sputum production can precede development of airflow limitation by

many years, although not all individuals with cough and sputum production go on to develop COPD. Other symptoms may include wheezing, chest tightness, haemoptysis and, at an advanced stage, anorexia and weight loss.

Spirometry is necessary for definitive and accurate diagnosis of COPD. Spirometry is the gold standard as it is the most reproducible, standardised and objective way of measuring airflow limitation. A finding of FEV₁ of less than 80% of the predicted value after bronchodilation and a FEV₁/FVC ratio below 70% predicted confirms the presence of airflow limitation that is not fully reversible. Serial measurements of FEV₁ are essential to monitor disease progression, and a fall of more than 50ml/l per year implies accelerated decline. GOLD recommends that health care professionals involved in the diagnosis and management of COPD patients should have access to spirometry.

Targeting COPD in primary health care

Due to low symptom awareness, COPD is not usually diagnosed before it is at a moderately advanced stage and significantly affecting a person's quality of life. Early diagnosis enables initiation of appropriate prevention and treatment strategies. Diagnosing COPD in primary health care is an effective means of helping people at an early stage. For this reason GOLD has developed the 'Could it be COPD?' questionnaire (Table 1). This questionnaire consists of 5 simple questions about COPD symptoms. It is mainly a self-assessment questionnaire which can be conducted by the individual in just over 30 seconds. If the person has answered yes to 3 or more questions he/she is encouraged to

Table 1: Could it be COPD?

1. Do you cough several times most days?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
2. Do you bring up phlegm or mucus most days?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
3. Do you get out of breath more easily than others your age?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4. Are you older than 40 years?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
5. Are you are current or an ex-smoker?	Yes <input type="checkbox"/>	No <input type="checkbox"/>

If you have answered yes to three or more questions, ask your doctor if you might have COPD and should have a simple breathing test.

Table 2: Therapy at each stage of COPD

Mild	Short-acting bronchodilator prn
Moderate	Short-acting bronchodilator prn, Regular treatment with one or more long-acting bronchodilators Rehabilitation
Severe	Short-acting bronchodilator prn, Regular treatment with one or more long-acting bronchodilators Inhaled glucocorticoids if there is significant symptomatic and lung function response or repeated exacerbations Rehabilitation
Very Severe	Short-acting bronchodilator prn, Regular treatment with one or more long-acting bronchodilators Inhaled glucocorticoids if there is significant symptomatic and lung function response or repeated exacerbations Treatment of complications Rehabilitation Long term oxygen therapy if there is chronic respiratory failure.

ask the doctor to investigate the possibility of COPD by having a simple breathing test done. The questionnaire in Table 1 can be very easily reproduced by health care professionals. It can be made available at the waiting area of a doctor's clinic. It can also be made available through community pharmacies. Pharmacists can identify at risk patient as those who regularly ask for cough preparations, or whom they know to be smokers/ex-smokers or who complain of being short of breath. These could be encouraged to take the questionnaire and if appropriate referred to a doctor for further investigation. The questionnaire may also have a poster format which may be placed in a doctor's clinic or a pharmacy. This is an effective means of increasing awareness among health care professionals and the general public.

Prevention and treatment of COPD

Since cigarette smoking is the major cause of development of COPD, smoking cessation is the single most effective way to arrest its progression. Every contact between health care professionals and smokers should be used to reinforce advice about smoking cessation. This message is strengthened by linking smoking to signs and symptoms of the disease. Pharmacotherapy, such as nicotine replacement and bupropion, should be appropriately prescribed in the absence of any other contraindications.

Healthcare professionals should maintain contact with persons attempting smoking cessation and offer ongoing support. Follow up of these persons on a regular basis enhances the chance of a sustained successful outcome.

Therapeutic management of COPD should be characterised by a stepwise increase in the treatment depending on severity of the disease. Table 2 provides an overview of the therapy at each stage of COPD.

Bronchodilators are central to the symptomatic treatment of COPD. Depending on the severity, inhaled bronchodilators may be given on a regular basis to prevent and control symptoms or on a prn basis for relief. Inhaled bronchodilators used in COPD are β_2 agonists, which may be short acting (eg salbutamol, terbutaline) or long acting (salmeterol, formoterol)

and anticholinergics which may also be short-acting (ipratropium) or long acting (tiotropium). The use of methylxanthines are restricted due to side effects and narrow therapeutic window.

Inhaled glucocorticoids are of limited use among patients with COPD, except in those presenting with repeated exacerbations. In such cases inhaled glucocorticoids have been shown to reduce the frequency of exacerbations and improve quality of life. Recent evidence has shown that inhaled glucocorticoids combined with long acting β_2 agonists are more effective than the individual components.

Oxygen therapy is the principal component of treatment for patients with very severe COPD. Long term oxygen given at this stage has been shown to increase life expectancy.

Conclusion

In 2002, under the auspices of GOLD and the academic sponsorship of the University of Malta, the Department of Health, the Malta College of Pharmacy Practice and the Malta College of Family Doctors, *The Malta Guidelines for the Management of Chronic Obstructive Pulmonary Disease* were published and distributed to health care professionals. This was a first step towards sensitising health care professionals to the problem of COPD. The fight against COPD, however, needs a continuous concerted effort by health care professionals, policy makers and public health officials. It is also necessary to increase awareness among the general public.

Further Reading

National Heart, Lung and Blood Institute. Morbidity and mortality: chartbook on cardiovascular, lung and blood diseases. Bethesda MD:US Department of Health and Human Services. Public Health Service, NIH.

<http://www.nhlbi.nih.gov/resources/docs/cht-book/htm>

Malta Guidelines for the Management of Chronic Obstructive Pulmonary Disease. Cacciottolo JM, Cordina M (Eds) Malta 2002. ISBN: 99932-0-170-7. <http://www.mcppnet.org/copdindx.htm>

GOLD: Global strategy for the diagnosis, management and prevention of chronic obstructive pulmonary disease. NIH publication no.2701, US 2001. <http://www.goldcopd.com>