Screening Pointers: COPD

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Fact Box: COPD

COPD is the fourth leading cause of death for men and the seventh for women in North America.

Overall, the mortality rate has increased for women and decreased for men.[1]

Point #1

Chronic obstructive pulmonary disease (COPD) symptom onset is generally insidious with progressive exertional dyspnea and chronic productive cough. COPD is a systemic disease

COPD Manifestations

- Right heart failure
- Skeletal muscle dysfunction
- Secondary polycythemia
- Malnutrition
- Weight loss
- Depression[1]

Point #2

While 80% to 90% of COPD cases are associated with smoking, patients with alpha-1-antitrypsin (AAT) deficiency are also at significant risk.

Other COPD Risk Factors

- Environmental exposures (*i.e.*, air pollutants [sulphur dioxides])
- Occupational exposures (*i.e.*, cadmium and silica dusts)
- Passive smoking[3]

F.Y.I.

Despite the need for objective spirometric evidence in COPD diagnosis, a "short-term provisional diagnosis of 'clinical COPD'" is acceptable in patients with characteristic symptoms when access to spirometry is not immediately available.[1]

Point #3

Diagnosis is complicated by misconceptions associated with terms such as chronic bronchitis and emphysema. Another difficulty is the frequent labelling of smokers (current or prior), who suffer from dyspnea and/or chronic cough, as having COPD in the absence of objective data.

COPD can only be diagnosed with objective demonstration of airflow obstruction; therefore spirometry is mandatory for diagnosis.

Spirometric Indices for COPD Diagnosis

- Forced expiratory volume in one second (FEV_1) to forced vital capacity (FVC) of < 0.7
- Post-bronchodilator FEV_1 < 80% predicted.

According to the Canadian Thoracic Society (CTS), the presence of both indices is necessary for COPD diagnosis.[1]

Practice Tip

Screening for AAT deficiency is indicated in any patient with COPD that has atypical features, including:

- positive family history,
- early onset disease, and
- those disabled by symptoms in their 40s or 50s.[1,3,4]

Point #4

In order to avoid under-diagnosing COPD, the Canadian Thoracic Society recommends spirometry screening in symptomatic smokers or ex-smokers over 40 years of age with:

- chronic cough and/or sputum production;
- increased exertional shortness of breath; or
- long-lasting or frequent upper respiratory tract infections.

Point #5

There is "no clear evidence of a specific threshold effect of FEV_1 on clinical outcomes" indicating that subdividing disease severity based on arbitrary FEV_1 values may not be valid when applied clinically.[1]

The Medical Research Council dyspnea scale should be used to assess disease severity after COPD diagnosis.

MRC Dyspnea Scale

COPD Stage	Symptoms
At risk	asymptomatic smoker, ex-smoker, or chronic cough/sputum (post-bronchodilator $FEV_1/FVC > 0.7$ and/or $FEV_1 >$ 80% predicted)
Mild	shortness of breath from COPD† when hurrying on the level or walking up a slight hill
Moderate	shortness of breath from COPD† causing patient to stop after walking about 100 m on the level
Severe	shortness of breath from COPD† making patien too breathless to leave the house, breathless after undressing, or presence of chronic respiratory failure/clinical signs of right heart failure

† In the presence of non-COPD conditions that may cause shortness of breath, patient symptoms may not appropriately reflect COPD disease severity.[1]

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Point #6

Although the CTS severity classification scheme does not use FEV_1 thresholds, the role of spirometry in the management of COPD is important. The CTS has therefore provided recommendations defining the severity of airflow obstruction (which may differ from clinical severity of COPD). CME

Classifying Airflow Obstruction in COPD

Mild
- FEV_1 60% to 79% predicted, $FEV_1/FVC < 0.7$

Moderate
- FEV_1 40% to 59% predicted, $FEV_1/FVC < 0.7$

Severe
- FEV_1 < 40% predicted, $FEV_1/FVC < 0.7$

References:
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3. Todd D, Marciniuk D: A breath of life – advances in chronic obstructive pulmonary disease. Can J Diagnosis 2003; 20(7):74-80.
4. Abboud R, Ford G, Chapman KR, et al: Alpha1-antitrypsin deficiency: A position statement of the Canadian Thoracic Society. Can Respir J 2001; 8(2):81-8.

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