SMOKING AND YOUR LUNGS

The most prevalent form of tobacco addiction is cigarette smoking and intuitively, the lungs would have to put up with the brunt of harmful effects of the cigarette smoke that is inhaled.

Among the many lung diseases in smokers, 2 major respiratory diseases are most significant, because these illnesses are almost always caused by or associated with smoking, and these diseases have major impact on the sufferer in terms of quality of life and longevity.

The 2 common and serious lung diseases in smokers are: (1) Chronic Obstructive Pulmonary Disease, and (2) Lung Cancer. While Lung Cancer is garnering a certain amount of and public awareness and media attention (*Newsweek* August 22, 2005 - cover story), chances are, you do not know much about the other smoking-related "lung problem" - Chronic Obstructive Pulmonary Disease (COPD).

This is unfortunate, as from a general perspective, more smokers suffer from COPD than lung cancer and COPD is a deadlier disease than lung cancer (i.e. causing more deaths annually).

Chronic Obstructive Pulmonary Disease

A major public health burden

COPD is a common disease afflicting millions of people worldwide and exacting a very heavy global disease burden. Surprisingly, public awareness of this disease is lacking and many people have not even heard of it.

In America and many developed countries, COPD is the 4th leading cause of death and, among the top 5 leading cause/s of death in the US, COPD is the only one that is increasing in incidence - a disparity all the more striking amid the dramatic decline in deaths from heart disease and stroke.

If the present trend continues, COPD will be the 3rd leading cause of death in the US in about a decade. In 1990, a study by the World Bank and World Health Organization (WHO) ranked COPD 12th as a burden of disease; by 2020, it is estimated that COPD will be ranked 5th.

What is COPD?

COPD is an umbrella term that encompasses 2 main disorders--- emphysema and chronic bronchitis--- diseases that are characterized by obstruction to air flow in and out of the lungs. Emphysema and chronic bronchitis frequently coexist. Thus physicians prefer the term COPD. Smoking is *the* major cause of this condition. Air pollution, exposure to industrial smoke or dust and long term inhalation of smoke from wood fires in developing countries are other minor causes.

Smoking progressively and gradually destroys the lungs and causes a decline in lung function (the capacity of our lungs to ventilate i.e. bring fresh air in from the environment and expired gases out from the body).

This capacity of the lungs to ventilate can be measured by undergoing a simple lung function test known as spirometry. One of the measurements during spirometry is the FEV_1 (Forced Expiratory Volume in One Second), the volume of air exhaled in the first second after a deep inhalation. For COPD patients, FEV_1 is used to determine the severity of obstruction in the air passages of the lungs.

In normal people who do not smoke, a loss of lung function (FEV_1) is expected as one grows older (see Figure 1). In smokers, the rate of decline of lung function (FEV_1) is about double that of smokers. In

smokers who have COPD, the rate of decline can be 4-6 times that of non-smokers, i.e., the patient has greater obstruction in the air passages and less lung function as the patient gets older.

The problem is that the loss of lung function in COPD patients is so gradual that most patients with COPD do not realize that they have the illness till it is severe. By the time most patients are diagnosed to have COPD, they may have lost at least 50% of their pulmonary function. This is exactly why the Chronic Obstructive Pulmonary Disease Association (Singapore) (www.copdas.com) in cooperation with other international agencies such as the Global Initiative for Chronic Obstructive Lung Disease (www.goldcopd.com) strongly encourages smokers, especially those with symptoms such as persistent cough and/or breathlessness to undergo spirometry testing.

Who is likely to have COPD?

The symptoms of COPD can range from chronic cough and sputum ('phlegm') production to severe disabling shortness of breath. In some individuals, chronic cough and sputum production are the first signs that they are at risk for developing the airflow obstruction and shortness of breath characteristic of COPD. In others, shortness of breath may be the first indication of the disease. Individuals with COPD increasingly lose their ability to breathe.

Acute infections or certain weather conditions may temporarily worsen symptoms (exacerbations), occasionally where hospitalization may be required. Bear in mind that the progression of the disease and the loss of lung function can be so gradual that, presently, many patients don't realize they have COPD till late. Hence if you are smoker or ex-smoker who is (A) Above 40 years old, with (B) Breathlessness and/or (C) Chronic cough, please consult your doctor, and preferably undergo spirometry testing to assess if you are have COPD.

Double-barrel smoking gun

Smokers with COPD are at least 2 times more likely to develop lung cancer than smokers who do not have COPD. Thus, COPD may be an additional risk factor for smokers developing lung cancer! So the message is - do not smoke and if you are a smoker, do quit for it may not be just a gun you are smoking but a double-barrel one at that.

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