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Initiation of Long-Acting Bronchodilator Treatment at an Early Stage of COPD can Slow Down Disease Progression

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INTRODUCTION

Chronic Obstructive Pulmonary Disease (COPD) is a respiratory disease characterized by chronic airway inflammation, deterioration of lung function over time, and progressive impairment of quality of life. COPD is associated with high mortality and morbidity and high economic and social burden, largely due to the need for comprehensive and ongoing medical support. Despite the availability of both national and international guidelines, COPD remains underdiagnosed, undertreated, and seldom considered a priority health problem. It has long been known that smoking cessation is the only effective intervention to reduce the risk of developing COPD and slow its progression. In stable COPD, drug therapy is used to relieve symptoms, reduce the frequency and severity of exacerbations, reduce disease progression and mortality, improve well-being, and increase exercise tolerance. It was previously believed that COPD treatment should follow a stepwise approach that relied solely on disease severity as assessed by spirometry.

DESCRIPTION

Periodic (maintenance) treatment with one or more long-acting bronchodilators if the disease is advanced and lung function is declining. Recently, data on the clinical manifestations of COPD have led to a new classification of the disease. As highlighted in the latest edition of the GOLD document, airflow limitation (FEV1) alone does not adequately describe disease status, so the level of airflow limitation is modified by symptoms and exacerbation rates. Route of administration is an important factor in prescribing drugs for COPD. Inhalation therapy is generally preferred. For orally administered theophylline, blood levels should be checked frequently as side effects are more common with oral administration. A variety of inhalation devices are available, and drug delivery to the lungs varies by device and technique. Dry Powder Inhalers (DPI) is more convenient compared to simple Metered Dose Inhalers (MDI) and may improve drug deposition in COPD patients. Nevertheless, the topic is somewhat controversial and deposition also depends on available inspiratory flow (acceleration) depending on the severity of COPD. Nebulizer solutions, on the other hand, may be suitable for people with excessive over inflation and consequently low inspiratory flow.

Drugs that increase forced expiratory volume per second (FEV1) or improve other vital capacity parameters, usually by altering airway smooth muscle tone, are called bronchodilators. Although the reversibility of airway obstruction is often limited, the use of bronchodilators is one of the key components in the management of COPD. The most important effect of anticholinergic drugs such as ipratropium, tiotropium and oxitropium bromide appears to be blocking the action of acetylcholine on its receptors. Methylxanthines may act as non-selective phosphodiesterase (PDE) inhibitors, but have been reported to have a number of non-bronchodilatory effects that may be potentially beneficial. Similarly, methylxanthines improve arterial blood gas pressure and respiratory capacity. In addition, there is evidence that theophylline is an activator of histone deacetylase at low therapeutic concentrations and that this activation enhances the anti-inflammatory effects of corticosteroids.

CONCLUSION

Initially, aggressive risk reduction should be sought in his mild (stage I) COPD by adding short-acting bronchodilators as needed. Airway inflammation in COPD responds poorly to currently

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available anti-inflammatory agents, so sustained bronchodilation remains the primary goal of his COPD treatment. Increasing evidence suggests that treatment with long-acting bronchodilators initiated early in the disease may slow disease progression and improve the patient's quality of life. In addition, combining bronchodilators with different pharmacological profiles can further enhance therapeutic efficacy.

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CONFLICT OF INTEREST

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