

Chronic obstructive pulmonary disease (COPD) is currently the fourth cause of mortality in the world^[1] and it is predicted to rank third in the year 2020.^[2] The prevalence of COPD varies in different regions of the world, but it affects at least 10% of the adult population.^[3]

According to the latest update of the global strategy for the diagnosis, management and prevention of COPD (The Global Initiative for Chronic Obstructive Lung Disease [GOLD]), it is defined as a “preventable and treatable disease with some significant extra-pulmonary effects that may contribute to the severity in individual patients. Its pulmonary component is characterized by airflow limitation that is not fully reversible. The airflow limitation is usually progressive and associated with an abnormal inflammatory response of the lungs to noxious particles or gases.”^[1] This definition has several aspects that deserve specific comment.

First, it starts by acknowledging that, despite being a chronic disease (this is, despite being a disease that can not be ‘cured’ with the therapeutic armamentarium we have today), it is “*preventable*” (a plea to reducing tobacco consumption mostly) and “*treatable*” (this is to emphasize that our current therapeutic armamentarium is indeed capable of improving many manifestations of the disease, including symptoms, exacerbations, health status and, perhaps, prognosis).^[4,5] Thus, the glass is half full and half empty. We are doing much better than we used to,^[6] but we still have a lot of work to do. The second aspect of the GOLD definition that requires comment in this context relates to the fact that COPD is currently considered an “*inflammatory disease*”. In fact, it is even acknowledged that this inflammatory reaction of the lungs occurs in response to “*noxious particles and gases*”.^[1] Of course, it is well established that cigarette smoking is the main risk factor of COPD but the fact that ‘other’ noxious particles or gases are included in the definition intends to highlight the fact that a significant percentage of never smokers can also develop the disease.^[7,8] In any case, the recognition of COPD as an inflammatory disease immediately situates anti-inflammatory drugs in the centre of the stage. The most commonly used anti-inflammatory drugs in COPD are inhaled corticosteroids (ICS).^[1] Yet their efficacy in this disease is controversial.^[9,10] It is not surprising, therefore, that other anti-inflammatory pharmacological alternatives are being actively searched and developed by different pharmaceutical companies interested in the field of COPD. The third and final part of the definition that deserves comment relates to the recognition that COPD has “*some significant extra-pulmonary effects that may contribute to the severity in individual patients.*”^[1] This opens the possibility that oral medications may have a role in the management of this disease.^[11]

Cilomilast is an oral nonsteroidal, phosphodiesterase 4 (PDE4) inhibitor anti-inflammatory drug that has been extensively studied in patients with COPD.^[12,13] In this supplement to *Drugs*, comprehensive information on the clinical programme developed by GlaxoSmithKline on cilomilast is presented. Information includes an overview on PDE4 inhibitors in general and on cilomilast in particular, followed by presentation of the results of a number of studies aimed at determining the mechanisms of action of

cilomilast, the efficacy and safety results of the pivotal phase III studies, and the results of the extension studies (maintenance therapy with cilomilast). Also presented are the effects of the drug on a number of particular but clinically relevant characteristics of COPD, such as lung hyperinflation and cardiovascular function, and its potential when combined with other established treatment regimens for COPD, such as the combination of the long-acting β_2 -adrenergic receptor agonist salmeterol and the ICS fluticasone propionate. Overall, the reader will find here a very extensive and detailed source of information on a drug that, unfortunately, did not make it to the market because of lack of consistency in the results of these many studies. Nonetheless, it is an important reference for all those interested in developing other drugs in COPD that may eventually contribute to further improving the health status and prognosis of the patients with this very frequent, often undiagnosed, disturbing and potentially fatal disease.

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