

The burden of respiratory disease

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Respiratory diseases are a leading cause of morbidity and mortality world wide. The World Health Organisation attributes 18.7% of the total number of deaths to respiratory disease, whilst in Europe respiratory diseases rank as the second cause of death after cardiovascular disease. In economic terms, respiratory diseases place a burden of approximately €102 billion on Europe. A total of €48.3 billion, being due to days lost from work with the leading cause (62.4%) being chronic obstructive pulmonary disease, followed by asthma (21.4%) and pneumonia (7.6%). In terms of pharmaceuticals, Europe spends €3.6 billion on anti-asthma drugs and €2.7 billion on drugs to treat COPD (European White Lung Book).

Health care systems are more oriented towards treating acute problems. However, chronic disease management is more complex as it necessitates a more horizontal and integrated approach. Management of chronic disease is an ongoing lifetime task requiring a multidisciplinary team of health care professionals together with the patient and also with the involvement of the patient's family.

This approach is more difficult in practice and may be criticised as being unrealistic. Evidence has however shown us that it provides better clinical outcomes and improved quality of life.

While the spectrum of drugs to treat respiratory disease continues to increase and more knowledge is gained regarding pathophysiology, there are an unacceptably high percentage of patients who are not receiving the

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appropriate treatment resulting in a negative impact on their lives and that of their families. It may seem obvious that the appropriate diagnosis must be made and the correct treatment for the patient with the disease (as opposed to just treating the disease) is selected, the patient then needs to be monitored and therapy adjusted accordingly. Surprisingly this is not done in a large number of patients.

If we had to consider asthma and COPD, we encounter a number of common pitfalls. Very often an appropriate differential diagnosis between asthma and COPD, which necessitates spirometry, is not performed. In COPD patients, treatment all too often includes an inhaled glucocorticoid, a β_2 agonist and an anticholinergic agent. While at times this treatment is indicated, since a proportion of patients present with both asthma and COPD, in those patients who only present with COPD, inhaled glucocorticoids are not useful, unless the condition is severe ($FEV_1 < 50\%$ predicted) and should only be used if there is a significant symptomatic and lung function response or if there are repeated exacerbations (eg, 3 in the last 3 years). On the other hand, withdrawing inhaled glucocorticoids may lead to

exacerbations in some patients. Prescribing an additional inhaler when not absolutely necessary will only tend to confuse the patient and possibly decrease adherence to medication which is of some use and also contributes to increased drug costs.

Asthma may be under diagnosed and under treated. With the exception of intermittent asthma, inhaled glucocorticoids are indicated as first line therapy. Failure to prescribe these drugs in the appropriate dose will lead to deterioration in lung function, increased symptoms and exacerbations and eventual need of a higher dose of glucocorticoids to achieve control of the condition. Patients may need emergency room visits and possibly hospital stays. These factors, accompanied by days lost from work, lead to a decrease in the quality of life of the patient and impose a substantial financial burden to the health care system. These undesirable events may also occur due to inappropriate monitoring of the condition. Although prescribed the appropriate therapy, patients may either not be taking their therapy altogether or they may be using their inhaler inappropriately.

Over treatment with inhaled glucocorticoids may also be a problem. High doses are necessary to achieve

control as fast as possible, however, patients need to be reviewed on a regular basis and stepped down accordingly. While the safety profile of inhaled glucocorticoids is clearly better than that of oral glucocorticoids, evidence shows that long term treatment with inhaled glucocorticoids leads to a number of systemic side effects. Emergence of systemic side effects increase morbidity and treatment costs.

This publication is aimed at sensitising pharmacists and doctors to common respiratory conditions with the aim of improving patient care. While appropriate therapy is available, suboptimal therapeutic management is often encountered.

Emphasis has been placed on asthma and COPD, however, antibiotic use also allows for vast room for improvement. Antibiotic dosing for the future is aimed at individualised dosing. This would assure better clinical and bacteriological efficacy and lead to minimisation of development of resistance, adverse effects and potentially costs.

Improved pharmacotherapeutic management leads to better patient outcomes, increased professional satisfaction and makes better use of the financial resources available.