Comorbidity in asthma is important and requires a generalist approach

See linked article by Stepphun *et al*. on pg 22

*Stewart W Mercer[1]

[1] Professor of Primary Care Research, Department of General Practice and Primary Care, Institute of Health and Wellbeing, University of Glasgow, Glasgow, UK

*Correspondence: Professor Stewart W Mercer, Department of General Practice and Primary Care, Institute of Health and Wellbeing, University of Glasgow, 1 Horseletthill Road, Glasgow G12 9LX, UK
Tel: +44 0141 330 8330 Fax: +44 0141 330 8331
E-mail: stewart.mercer@glasgow.ac.uk

The importance of comorbidity in patients with asthma is amply demonstrated in the study by Steppuhn and colleagues in this issue of the *PCRJ*.[1] In an analysis of a large population sample of adults with asthma in Germany they found high levels of comorbidity of other important chronic conditions. Indeed, adults who only had asthma were in a minority, with over 60% of asthma sufferers having one or more additional comorbidities out of a list of eight conditions (diabetes mellitus, hypertension, chronic heart failure, depression, osteoarthritis, stroke, coronary heart disease, and cancer). For seven of these eight conditions (cancer being the exception), prevalence rates were higher in patients with asthma compared with the general population, even after adjusting for potential confounding variables. The majority of patients with comorbidity had more than one comorbid condition, with almost one in five having three or more additional conditions. Increasing levels of comorbidity were associated with more unscheduled health service utilisation for asthma, both in terms of hospital admissions (a greater than three-fold increase), and outpatient care (greater than two-fold increase).

This study[1] confirms and builds on the small number of previous studies on asthma and comorbidity, and is generally in line with previous findings. As the authors rightly state, the phenomenon of comorbidity in asthma warrants further study in terms of underlying mechanisms, drug-drug interactions, effects on quality of life, and implications for management – including self-management. Asthma is a common condition, and thus the implications of a heavy burden of comorbidity are important in terms of population health and healthcare costs. Importantly, the study also demonstrated high levels of comorbidity in young as well as older patients, suggesting that without effective interventions such younger comorbid asthmatics may be on a trajectory towards high burden (and high cost) multimorbidity as they age. The fact that comorbidity was found to be socially patterned, being highest in those of lowest educational status, is also important with respect to health inequalities and the apparently ever widening gap between rich and poor.[2]

It is also important to place these findings within the growing research and policy focus on multimorbidity. Comorbidity – as in the study by Stepphun *et al*.[1] – is defined as an index condition plus additional conditions, whereas multimorbidity – a term being increasingly used – is simply defined as the co-existence of two or more conditions within an individual without any single disease being the focus.[3] This may be a more useful term in primary care given the longitudinal nature of the care provided and the fact that the importance of any one condition may wax and wane over the life-course. In a recent nationally representative study of almost 1.8 million people of all ages in Scotland (about one third of the population) we found that multimorbidity affected one in four people.[4] Out of the 40 chronic conditions studied, including asthma, there was no condition in which most people had that condition only.

Thus multimorbidity is the norm, not the exception, in chronic disease. It is also the norm for most of the elderly population. Yet, as Steppuhn and colleagues also point out for asthma, a single-disease paradigm dominates healthcare policy, delivery and training. Guidelines are based on evidence from unusual people who only have a single condition; most randomised controlled trials (RCTs) exclude patients with other conditions. Therefore, the relevance of guidelines to most people with most chronic conditions is questionable. The growth of single-disease guidelines (which suggest when to start new medications but seldom when to stop) together with the rise in multimorbidity prevalence (in part due to the ageing population), is responsible for the burgeoning rise in polypharmacy.[5] Not all polypharmacy is bad,[6] but it does often result in poorer adherence to medication, increases the risk of serious drug-drug and drug-disease interactions, and adds to treatment burden.[5,7,8]

The increased risk of depression in asthma reported by Steppuhn and colleagues is well recognised in a wide-range of chronic conditions.[9] The risk of depression rises as the level of multimorbidity increases.[4] Once again, this is heavily socially patterned, with those living in more deprived areas having a higher risk of an associated mental health problem as the number of physical conditions increases.[4] Such clinical complexity calls for a generalist approach, compounded in deprived areas by the continuing existence of the 'inverse care law'.[10]

Interventions targeted specifically at patients with comorbidity and multimorbidity are desperately needed. A recent systematic review found only a handful of intervention studies worldwide that focused on multimorbid patients, with disappointing outcomes.[11] Complex clinical situations (involving comorbid or multimorbid patients) almost certainly require complex interventions, and research bodies must begin to fund such studies.

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A golden goal in 2010, and another GOLD in 2014 in primary care, or *vice versa*

See linked article by Boland *et al*. on pg 30

*Joan B Soriano[1], Miguel Román-Rodríguez[2]

[1] Medical Epidemiologist, FISIB-IdISPA Hospital Universitari Son Espases, Palma de Mallorca, Spain
[2] General practitioner, Centre de Salut de Son Pizà, Palma de Mallorca, Spain

*Correspondence: Dr Joan B Soriano, FISIB-IdISPA Hospital Universitari Son Espases, Unitat Assaigs Clínics Mòdul I, Nivel -1, Despatx 2, Carretera de Valldemossa, 79; 07010 Palma de Mallorca, España
Tel: +34 871 205000 Ext 65720 Fax: +34 871 206868
E-mail: jbsoriano2@gmail.com

In this issue of the *PCRJ*, Boland *et al*. report an assessment of the old and new GOLD COPD classifications using a large cohort obtained from 28 Dutch primary care centres.[1] In a way, we Spaniards could compare this Dutch GOLD assessment with the goal from Andrés Iniesta who scored deep into extra-time to give Spain victory over the Netherlands in the World Cup final at Soccer City in Johannesburg in 2010[2] after an exciting but goalless first 114 minutes… (see Figure 1, available online at www.thepcrj.org).

On November 16th 2011, the current revision of the GOLD Executive Summary was released in Shanghai, China,[3] and later published elsewhere.[4] It presented a new classification of COPD which was intended to provide a better understanding of the impact of the disease on an individual patient than the previous spirometry-only COPD staging. The four previous spirometry categories were reduced to two, and information on exacerbations and symptoms was added to form a three-dimensional patient evaluation.

This new Dutch research[1] should be commended, as it showcases a true real-life COPD management assessment. The GOLD Committee should be happy to see that more investigators are independently validating their new recommendations, with this study being added to the growing list of replications, most of which show consistent findings.[5] In a population with generally mild COPD – as it is often the case (but not always) in primary care – Boland *et al*. conclude that "… the GOLD ABCD groups classification is more closely associated with costs and HRQoL [health-related quality of life] than the GOLD 1234 grades classification. Furthermore, patients with GOLD-C had a better HRQoL than those with GOLD-B but the costs of the two groups did not differ." This is good news indeed for GOLD; the new GOLD ABCD staging relates very well with increasing costs, and also with both disease- and generic-HRQoL. However, even in this primary care population, patient symptoms in groups B and D produce inconsistencies in staging. There are also novel and very important findings here on comorbidities.[1] GOLD clearly indicates the relevance of COPD comorbidities in their latest updates, and these primary care COPD patients in stages GOLD B and D have more comorbidities, less physical activity and self-efficacy, and more unemployment.

The strengths of this research from Boland *et al*.[1] include novelty; there are only a handful of assessments available in primary care,[6-9] mostly with consistent findings that neither age nor gender should be associated with the GOLD severity distribution. The study also includes a comprehensive cost-associated analysis (which includes travel costs) from a prestigious, experienced group of researchers, as well as very sophisticated statistics (which are not for the mere mortal clinical reader…). There is also a comprehensive online appendix with extensive sub-analyses. All in all, this study[1] should indeed stimulate