

Respiratory disease

Changes in health-related quality of life scores in COPD predict prognosis

Impairment of health-related quality of life (HRQoL) is a marker for risk of hospitalisation and death in patients with chronic obstructive pulmonary disease (COPD), a study from Spain has found.

Patients with COPD were recruited from respiratory outpatient clinics from 1999. Inclusion criteria were patients who had been diagnosed with COPD at least 6 months ago, had been stable for 6 weeks or more, and had an FEV₁ < 80% of the predicted value and FEV₁/FVC ratio < 70%. Patients with other respiratory diseases, cancer, psychiatric or neurological problems were excluded.

Basic demographic information was collected at entry and comorbidities identified from electronic health records. HRQoL was assessed using the validated Spanish version of the St George's Respiratory Questionnaire (SGRQ). The questionnaire has three domains (symptoms, impact and activity) and a global score. Each domain is scored from 0 to 100.

Pulmonary function tests were performed as well as measurements of CO diffusing capacity and respiratory muscle strength at study entry. Patients were assessed at baseline and at the end of the first and second years, and were followed up for three years. Participants were interviewed, annually, using the SGRQ to determine HRQoL and pulmonary function was also measured. At the end of each study period the health records were reviewed.

A total of 543 patients (96% men),

mean age 68 years, with a moderate level of obstruction (FEV₁ 55% of the predicted value) were included, of whom 23% were active smokers. Using the Global Initiative for Chronic Obstructive Lung Disease (GOLD) classification, 56% of the cohort were classified as GOLD group A and 28% as GOLD B. The SGRQ total symptoms, activity and impact scores at baseline were: 39.2, 44.5, 48.7 and 32.0 respectively.

During the follow-up, 6.8% of patients died in the first year, 6.4% in the second year and 4.9% in the third year.

Mean baseline SGRQ scores in the 409 survivors for symptoms, impact and activity were: 44.5, 45.9 and 30.5, respectively, and during the study period no deterioration was found.

Those who died had worse mean scores at baseline: 45.5, 61.9 and 40.1 respectively.

Results were expressed as the odds ratio (OR) of a 4-point increase in SGRQ score, which is considered a clinically significant change.

A clinically relevant deterioration in HRQoL as measured by SGRQ score at the annual follow-up was seen in at least one of the domains in patients who died before the next assessment. Every 4-point increase (deterioration) in the SGRQ was associated with a higher OR of death:

- Symptoms domain: OR 1.04 (95% CI: 1.00-1.08)

- Activity domain: OR 1.12 (95% CI: 1.08-1.17)

- Impacts domain: OR 1.11 (95% CI: 1.06-1.15)

A similar pattern was observed in HRQoL in relation to hospitalisation for COPD. Higher values in all three domains were significantly related to a higher hospitalisation rate for COPD in the following year ($P < 0.001$).

A deterioration in any of the SGRQ domains, particularly the activity and impacts domains over a one-year period of 4 or more points was a predictor of a higher likelihood of hospitalisation and death.

A limitation is that all cause mortality was used rather than identifying specific causes of death. However, this study supports previous evidence that there is an association between HRQoL and mortality, as well as hospitalisation rate for COPD. Moreover, it focuses where clinicians can identify 'warning signs' such as deterioration of the activity and impact domains of the SGRQ. Using HRQoL seems to be as accurate a

prognostic measure as more formal lung function tests but does not remove the need for regular spirometry.

The study authors state: 'There is a need for further research to investigate whether our findings with the SGRQ are replicated with other measures, in particular, with specific HRQoL questionnaires that are easier to administer in routine clinical practice, such as the CAT or the Clinical COPD Questionnaire.'

'If similar patterns were found with simpler tools, routinely measuring HRQoL would be not only useful but feasible.'

'Our findings emphasise the importance of quantifying HRQoL as a prognosis tool in COPD and allow a new perspective on the measurement of HRQoL in that it may provide a tool for general prognosis in the routine clinical assessment of COPD patients.'

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Esteban C, Arostegui I, Aramburu A et al. Changes in health-related quality of life as a marker in the prognosis in COPD patients. *ERJ Open Res* Published online 10 Jan 2022