DOI: 10.4103/0971-5916.346065

Quick Response Code:

Authors' response

The authors thank Dr Rai for his valuable insight and views into our manuscript who have raised some keen observations that we are happy to address. The sampling method used in the study was convenient sampling. The patients samples were selected from among the outpatients visiting the Pulmonary Medicine outpatient clinics at a secondary care hospital. The period of enrolment of our sample was three months from the beginning of May till the end of July. These months cover the months of warm weather till just before the monsoon season sets in. The rainy and colder months were purposefully avoided as most patients with COPD have higher rates of exacerbations during such months[1,2], which could potentially be a cause of bias. It would have been interesting to see how the results would have varied within the different seasons by following up the participants.

We are also in agreement that COPD itself can present with various other co-morbidities, and that is why we attempted to exclude other respiratory co-morbidities that may have potentially influenced the final result during the sampling process.

Inclusion criteria: (*i*) Patients aged 45 yr or above of either sex; (*ii*) patients suffering with COPD as diagnosed by the GOLD criteria; and (*iii*) patients who gave their consent and are willing to participate.

Exclusion criteria: (*i*) Patients suffering from other chronic lung diseases such as bronchiectasis, lung abscess; (*ii*) patients suffering from pulmonary tuberculosis; and (*iii*) asthma patients, as diagnosed based on GINA guidelines.

Co-morbidities that may have co-existed secondary to COPD itself were not excluded as they represent disease progression and would have accounted towards the impairment in quality of life (QoL) of the patients. The GOLD guidelines[3] themselves acknowledge that the St. Geroge's respiratory Questionnaire is one of the most comprehensive disease specific tool available to us to assess the impact of COPD. Other co-morbidities unrelated to the disease were not considered and were not within the scope of this study.

While the GOLD guidelines do mention 40 yr as the age cut off to suspect COPD, it has always been with a rider when it comes to using fixed FEV1/FVC ratio for diagnosis. The GOLD guidelines state "It should be noted that the use of the fixed FEV1/FVC ratio to define airflow limitation may result in more frequent diagnosis of COPD in the elderly, and less frequent diagnosis in adults <45 yr, especially in mild disease, compared to using a cut-off based on the lower limit of normal (LLN) values for FEV1/FVC". Hence, a lower limit of 45 yr was incorporated into the sample. As we had not incorporated anyone under the age of 45 yr at the time, it was not possible for us to retrospectively change our sampling technique to match the latest guidance.

We acknowledge that Dr Rai has raised an important point about patients with recent exacerbations prior to being enrolled into the study could have potentially influenced the results. The host organization for the study follows a protocol for lung function testing, wherein there should be a gap of at least four weeks between an acute exacerbation and performance of spirometry. This ensured that exacerbation was not a confounding factor in estimating the HRQOL. It is also pointed out that there is a weak correlation between FEV1, symptoms and health status of patients and suggest correlation of HRQOL with the A/B/C/D classification. The GOLD guidelines, suggest combined COPD assessment which incorporates recent exacerbations, hospital admission alongside the symptom of breathlessness measured against the mMRC (modified Medical Research Council) scale and further categorises them into groups A-D (The ABCD Assessment). Spirometry continues to be an integral part of assessment and as stated in the GOLD guidelines is an important component for the diagnosis and prognostication. The guidelines specifically require patients to undergo spirometry to determine the spirometric grade and this is expressed as a number. This number provides information regarding the severity of limitation (spirometry grade 1-4), while the letter (groups A-D) provides information regarding symptom burden and risk of exacerbation and are used to guide treatment alongside important clinical outcomes such as mortality and hospital admissions[3]. It is erroneous to conclude that spirometry has no role in the assessment

of COPD patients. The idea of categorising patients, based on symptom burden and risk of exacerbation, is to ensure that the treatment can be made specific for the patient. The four categories (A/B/C/D) would have a different impact on the QoL and also in a way categorizing patients by measuring the impact of the disease on the QoL by assessing symptoms. The SGRQ-C already incorporates the impact of symptoms to measure the impact of the disease on QoL[4,5]. Hence, we are of the considered opinion that correlating the HRQoL with the ABCD groups may not yield any clinically tangible outcomes.

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