Prevalence of COPD in sub-Saharan Africa: FRESH AIR Uganda survey

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Background
Chronic Obstructive Pulmonary Disease (COPD) is now recognised as a common disease in low and middle-income countries (LMIC). In sub-Saharan Africa, people are unaware of the damage to respiratory health caused by biomass smoke, a major cause of COPD in LMICs. The aim of this survey, performed in 2012, was to collect data on the prevalence and burden of COPD and related risk factors in a rural area of Uganda.

Methods
Population-based cross-sectional survey of 620 randomly selected participants aged 30 or older. Newly trained local healthcare workers conducted interviews in the villages using validated questionnaires, and performed pre- and postbronchodilator spirometry, and the lower limit of normal (LLN) threshold, i.e. the fifth percentile of the predicted FEV1/FVC ratio, was used as defining criterion of COPD, avoiding over-diagnosis of elderly and under-diagnosis of young participants.

Results

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Males</th>
<th>Females</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>30-39</td>
<td>124 (54%)</td>
<td>67 (30%)</td>
<td>191 (54%)</td>
</tr>
<tr>
<td>40-49</td>
<td>114 (47%)</td>
<td>76 (36%)</td>
<td>190 (47%)</td>
</tr>
<tr>
<td>50-59</td>
<td>70 (29%)</td>
<td>56 (26%)</td>
<td>126 (29%)</td>
</tr>
<tr>
<td>60-69</td>
<td>35 (14%)</td>
<td>36 (17%)</td>
<td>71 (17%)</td>
</tr>
<tr>
<td>70+</td>
<td>14 (6%)</td>
<td>10 (5%)</td>
<td>24 (6%)</td>
</tr>
</tbody>
</table>

According to the FEV1/FVC ratio lower than the LLN, the prevalence of COPD in participants older than 30 years was 16.2% (52.6% women); the mean age was 47 years (SD 14.0). Among the participants with COPD, 38% of men and 40% of women were in the age group 30-39 years; 7% were older than 70.

Mild obstruction was found in 78%, moderate obstruction in 20%, and severe obstruction in 2%; no cases were found with very severe obstruction.

Conclusions
- Using lower limit of normal as criterion, prevalence of COPD was 16.2%; 39% (both men and women) were between 30-39 years of age.
- In addition to a high smoking prevalence in young men, biomass smoke exposure was almost uniform in this population.
- Where airflow obstruction was present, it was not generally severe; the same went for symptoms, health-related quality of life and MRC dyspnoea score.
- 30% of participants with COPD had one or more exacerbations in the last 12 months.

With life expectancy of 52 years, COPD represents a major threat for men and women of all ages in rural areas of Uganda.

References
4. Quanjer et al, Multi-ethnic reference values for the 3-95 year age range, the global lung function 2012 equations, Eur Respir J 2012.