

LANGLH-D-17-01488

P11

Gold OA CC BY 4.0

Linked to 0984

Comment 

Collision of communicable and non-communicable disease epidemics—the case of HIV and COPD



In this issue of *The Lancet Global Health*, Jean Joel Bigna and colleagues report the results of their systematic review and meta-analysis of studies of chronic obstructive pulmonary disease (COPD) in people with HIV.¹ COPD is one of the most common non-communicable diseases that, as a group, are the leading causes of morbidity and mortality worldwide.² HIV is one of the principal infectious causes for morbidity and mortality globally.³ Although typically thought of as a problem of high-income countries, most of the burden of non-communicable diseases is seen in low-income and middle-income countries (LMICs), where they drive and perpetuate poverty.⁴ It is also in LMICs—and especially LMICs in the continent of Africa—where the greatest global burden of HIV is seen. As such, this first systematic review and meta-analysis of COPD in people with HIV is very timely.

Bigna and colleagues identified 30 observational studies involving 151686 participants, which reported estimates of the prevalence of COPD in the HIV-infected population between 5.6% and 10.6%.¹ Meta-analysis of data from these studies showed a higher risk of COPD in people living with HIV, versus those without HIV (pooled odds ratio 1.14, 95% CI 1.05–1.25).

Although most of the included studies were done in high-income countries in Europe and North America, most of the people with COPD and HIV live in LMICs. Only four of the included studies were done in Africa, the WHO region with the most people living with HIV.³ This finding is similar to what we found in 2013, when we did a systematic review of COPD studies in sub-Saharan Africa and found only one high quality prevalence study. This Burden of Obstructive Lung Disease (BOLD) study was done in South Africa and found a high prevalence of COPD: 22% of men and 17% of women.^{5,6} Taken together, these observations highlight an important imbalance between where this kind of research is done and where the need is greatest.

As Bigna and colleagues note, prevalence estimates vary depending on the diagnostic criteria used. Although most of the included studies used spirometry-defined COPD, many did not, raising the possibility that

some of the studies included people without COPD. This is another issue that is particularly relevant to Africa, where access to quality-assured spirometry is limited,^{7,8} and where results from recent BOLD studies have suggested that the most prominent problem is a high prevalence of low lung volume (low forced vital capacity), and not airflow obstruction.⁹

One of these studies was a non-communicable lung disease study (incorporating a BOLD study) that we did in urban Blantyre, Malawi, in which 24% of study participants had HIV. We found that more than 40% of the participants had abnormal lung function—mostly low forced vital capacity—but with no association between spirometric abnormalities and HIV.¹⁰

It is clear that we need a better understanding of the epidemiology of non-communicable lung diseases, including COPD, in African and other LMICs where the communicable and non-communicable disease epidemics and their various and overlapping risk factors collide. Although there is no doubt that tackling the tobacco epidemic is the greatest priority for COPD prevention and control globally, irrespective of other risk factors, there are parts of the world (including Africa) where other risk factors, such as HIV, are also of great relevance. It is not known how the natural course of COPD might differ in people with and without HIV, or whether there would be differences in the approach to the airways disease management between the two groups. The Article by Bigna and colleagues sets the scene for this work to be done, and we suggest that this should be focused on the region of the world that needs it most—Africa.

Marie Stolbrink, *Kevin Mortimer

Liverpool School of Tropical Medicine, Liverpool L3 5QA, UK
kevin.mortimer@lstm.ac.uk

We declare no competing interests.

Copyright © The Author(s). Published by Elsevier Ltd. This is an Open Access article under the CC BY 4.0 license.

- 1 Bigna JJ, Kenne AM, Asangbeh SL, Sibetcheu AT. Prevalence of chronic obstructive pulmonary disease in the global population with HIV: a systematic review and meta-analysis. *Lancet Glob Health* 2017; published online XX. [http://dx.doi.org/10.1016/S2468-2667\(17\)30984-4](http://dx.doi.org/10.1016/S2468-2667(17)30984-4)
- 2 WHO. Chronic obstructive pulmonary disease (COPD). Fact sheet. November, 2017. <http://www.who.int/mediacentre/factsheets/fs315/en/> (accessed Dec 6, 2017).

- 3 UNAIDS. Fact sheet—Latest statistics on the status of the AIDS epidemic. <http://www.unaids.org/en/resources/fact-sheet> (accessed Nov 29, 2017).
- 4 WHO. NCD mortality and morbidity. http://www.who.int/gho/ncd/mortality_morbidity/en/ (accessed Dec 6, 2017).
- 5 Finney LJ, Feary JR, Leonardi-Bee J, et al. Chronic obstructive pulmonary disease in sub-Saharan Africa: a systematic review. *Int J Tuberc Lung Dis* 2013; **17**: 583–89.
- 6 Buist AS, McBurnie MA, Vollmer WM, et al. International variation in the prevalence of COPD (the BOLD Study): a population-based prevalence study. *Lancet* 2007; **370**: 741–50.
- 7 Mehrotra A, Oluwole AM, Gordon SB. The burden of COPD in Africa: a literature review and prospective survey of the availability of spirometry for COPD diagnosis in Africa. *Trop Med Int Health* 2009; **14**: 840–48.
- 8 Zurba L. Spirometry: coming of age in Africa. *Breathe* 2016; **12**: 1–4.
- 9 Amaral AFS et al. Airflow obstruction and use of solid fuels for cooking or heating: BOLD results. *Am J Respir Crit Care Med* 2017; published online Sept 12. DOI:10.1164/rccm.201701-0205OC.
- 10 Meghji J, Nadeau G, Davis KJ, et al. Noncommunicable lung disease in sub-Saharan Africa. A community-based cross-sectional study of adults in urban Malawi. *Am J Respir Crit Care Med* 2016; **194**: 67–76.