Publisher
Bryan Pearson

Correspondence to:
African Journal of Respiratory Medicine
FSG Africa Ltd, Vine House Fair Green, Reach, Cambridge CB25 0JD, UK
www.fsg.co.uk
Tel: +44 (0)1638 743633
Fax: +44 (0)1638 743998
E-mail: editor@fsg.co.uk
ISSN 1747–5597 (print)
ISSN 2053-2512 (online)

First word

Respiratory disease in perspective

Respiratory disease is the major cause of mortality and morbidity worldwide, despite advances in immunisation, improvements in living conditions, and better diagnostic, preventive and treatment strategies. The spectrum of disease ranges from infectious diseases like pneumonia, bronchiolitis and tuberculosis to chronic non-communicable diseases like asthma and chronic obstructive pulmonary disease (COPD). The overwhelming burden of respiratory diseases and associated deaths occur in low- or middle-income countries, where appropriate resources to prevent, diagnose and manage such diseases are often unavailable.

African populations bear a disproportionate burden of respiratory morbidity and mortality relative to the population size both from infectious diseases as well as from non-communicable diseases including COPD and asthma. There is a very high burden of respiratory infectious diseases such as pneumonia, tuberculosis and HIV-associated respiratory illness. Asthma and tobacco associated respiratory disease are common and often more severe than that in high-income countries. COPD is common and has an onset at an earlier age than that in other areas of the world. Biomass fuel use is ubiquitous and a major contributor to the prevalence of pulmonary infections, malignancy and COPD. Tobacco-smoking rates are especially high in some African populations, driving severe respiratory illness in smokers as well as in children, household members and others who are passively exposed. Childhood respiratory illness is the commonest cause of mortality and morbidity in African children under 5 years, with around 20% of deaths due to pneumonia. Paediatric HIV is largely a disease of sub-Saharan Africa, and a cause of acute and chronic respiratory illness. Asthma is the commonest chronic disease in African children. This burden is compounded by the high proportion of children, up to 60% in some countries, who make up African populations. Further, increasing evidence indicates that lower respiratory disease or infectious exposures early in life are strongly associated with the development of chronic disease into adulthood, so driving the large burden of chronic illness. The large burden of illness intensifies the health system and resource challenges in achieving timely diagnosis and implementation of effective preventive or treatment options in these contexts.

(continued over page)

Contents

The Pan African Thoracic Society exists to promote respiratory health in Africa. It is supported by the Nuffield Foundation (UK) and the American Thoracic Society. www.africanthoracic.org

In this context, this 2nd Pan African Thoracic Society (PATS) Congress is especially timely and another important milestone for PATS. The comprehensive programme and workshops cover diverse areas of lung health to address the many challenges in different settings. PATS was formed to create a representative African respiratory society for the continent and to address the high burden of respiratory illnesses in Africa. The overall aim of PATS is to promote lung health in Africa through education, training, research and advocacy. In the past five years, PATS has grown and developed to become a voice for lung health in Africa, undertaking educational, research and advocacy initiatives and building African capacity to address the challenges of improving lung health on the continent. The opportunity to hold a combined congress with the South African Thoracic society is also an excellent way to bring together leading experts and to promote collaborations for lung health in Africa.

Professor Heather Zar
Department of Paediatrics and Child Health, University of Cape Town, South Africa, and President of PATS

Professor Refiloe Masekela
Department of Paediatrics and Child Health, Nelson R Mandela School of Medicine, Congella, South Africa
Chair, Science Committee, PATS Congress

TB in Africa: Are we winning the battle?

Sadly, TB is out of control in Africa![1] Of the estimated 10.4 million people globally who fell ill with TB in 2016, ~25% were from the WHO African region. Of the region's 2.5 million new TB cases, just under 25% of those were HIV-infected.[2] Thus, although there has been a gradual marginal decline in the global incidence of TB over the past 7 to 8 years, including in Africa, there is a considerable burden of disease. In countries like the Congo, Democratic Republic of Congo, Mozambique, and Sierra Leone, the TB incidence over the past 6 to 8 years has remained unchanged; in others, such as Liberia, it has increased; while there has been a decline in countries such as Zimbabwe and South Africa. Despite this, almost half a million patients are treated for TB annually in South Africa, which has the highest incidence of TB in the world (781 cases per 100,000 people), and TB is the most common cause of death in that country.[2] One positive finding is that mortality rates globally and in Africa declined substantially between 2000 and 2016 (in Africa, from 60 per 100,000 to ~30 per 100,000 per year). The picture for MDR TB is worrying, with 8 of the 30 high MDR TB burden countries being in Africa. South Africa, in particular, like Nigeria, has a serious MDR TB and XDR-TB problem, with an annual burden of disease of between 20,000 and 30,000 cases.[2,3] Already, drug-resistant TB makes up more than 80% of the drug-related treatment expenses and almost 50% of the total TB budget in South Africa is spent on MDR and XDR-TB.[4]

Why are we losing the battle against TB in Africa? The most important reason is that key drivers of tuberculosis are not being addressed. These include poverty and overcrowding, and HIV co-infection.[1] Other factors that drive the TB epidemic in Africa include smoking, alcohol abuse and poor nutrition, war and famine, and an epidemic of diabetes and lifestyle-related disease.[1]

TB diagnosis remains problematic. While newer tools are of suboptimal quality and accuracy, especially in sputum-scarce individuals and children, there is also poor roll-out of existing molecular diagnostic tools, such as Xpert Ultra. However, this is only the tip of the iceberg. About one-third of the total TB burden in Africa remains undiagnosed or unreported.[2] In the main, these are undiagnosed cases with minimal symptoms, or individuals who have failed to access healthcare for whatever reason. In South Africa this diagnostic gap amounts to ~200,000 people, and in countries like Nigeria, 70-80% of the TB burden falls into this category. Thus, new approaches to active case-finding (in contrast to passive case-finding, where the patient comes to the health facility) are needed. We recently showed, for the first time, that newer molecular diagnostic tools can be effectively used for active case-finding in the community.[5] We also urgently require the development and introduction of triage tests, i.e. low-cost tests that can be used in a community setting that will rule out, rather than rule in, disease. This will also facilitate targeting limited resources to those who need it in clinics that are currently heavily over-burdened.

Prevention is always better than cure. The current vaccine, BCG, is ineffective in adults. Thus, an effective vaccine for tuberculosis is urgently needed and would go a long way in reducing the disease burden. However, we still don't understand why some individuals who are otherwise healthy contract TB, and there are no firm correlates of protective immunity. Thus, we need to go back to the drawing board in terms of understanding the basic immunopathogenesis of tuberculosis.[1,6] Finally, more emphasis needs to be put on diagnosis and treatment of presumed latent TB infection (LTBI).

Unfortunately, we are losing the battle against TB in Africa. A multi-pronged approached is required with interventions at different levels, together with political will and socioeconomic upliftment, so that whether or not we lose the battle, we will eventually win the war against TB!

Keertan Dheda
Centre for Lung Infection and Immunity, Department of Medicine, University of Cape Town, Old Main Building, Groote Schuur Hospital, Observatory, Cape Town, South Africa

References

1. Dheda K, Barry CE, 3rd, Maartens G. Tuberculosis. *Lancet* 2016; 387(10024): 1211-26.
2. WHO. Global Tuberculosis Report. Geneva; 2017.
3. Dheda K, Limberis JD, Pietersen E, et al. Outcomes, infectiousness, and transmission dynamics of patients with extensively drug-resistant tuberculosis and home-discharged patients with programmatically incurable tuberculosis: a prospective cohort study. *Lancet Respir Med* 2017; 5(4): 269-81.
4. Pooran A, Pieterson E, Davids M, Theron G, Dheda K. What is the cost of diagnosis and management of drug resistant tuberculosis in South Africa? *PLoS One* 2013; 8(1): e54587.
5. Calligaro. G.L, Zijenah. L.S, Peter. JG, et al. The impact of new TB diagnostic technologies on community-based intensified case finding: a multi-centre randomised controlled trial. *Lancet Infect Dis* 2016: In press.
6. Dheda K, Gumbo T, Maartens G, et al. The epidemiology, pathogenesis, transmission, diagnosis, and management of multidrug-resistant, extensively drug-resistant, and incurable tuberculosis. *Lancet Respir Med* 2017.

PATS & SATS CONGRESS 2018

Siza iAfrika iphefumule: Help Africa Breathe

12 - 15 April ,Durban ICC, South Africa

SAVE THE DATE

Supported by:

This is a very exciting event for PATS that will bring together health professionals from many African countries to address the challenges for child and adult lung health on the continent. Respiratory disease is a major cause of death, disability and morbidity in Africa, where there is a double burden of infectious diseases including pneumonia or tuberculosis and non-communicable diseases such as asthma and chronic obstructive pulmonary disease. The congress will offer the opportunity to critically discuss these challenges and to work together to strengthen initiatives to improve care, build capacity, strengthen research, training and advocacy for better lung health in Africa. We look forward to your participation!

Prof Heather Zar
President: PATS

WWW.PATS2018.COM