EDITORIAL

# Managing HIV-associated Pulmonary Disease in Resource Limited Settings: What Needs to be done to improve diagnosis

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At the time of this publication, the all too familiar statistics continue to hit the headlines: Since the beginning of the epidemic, almost 78 million people have been infected with the HIV virus and about 39 million people have died of HIV. Globally, 35.0 million [33.2–37.2 million] people were living with HIV at the end of 2013. An estimated 0.8% of adults aged 15–49 years worldwide are living with HIV. Though the burden of the epidemic continues to vary considerably between countries and regions, sub-Saharan Africa remains most severely affected, with nearly 1 in every 20 adults living with HIV and accounting for nearly 71% of the people living with HIV worldwide[1].

We ought to be alive to the fact that globally respiratory tract infections are a major cause of mortality and morbidity in millions of people, second only to ischemic heart disease.[2, 3] Besides respiratory tract infections, be they viral, bacterial, fungal or parasitic; industrialisation has led to an increase in obstructive lung disease and mitotic lesions which may be associated with pollution and life styles. Compounding this clinical conundrum, the emergence of HIV related tumours such as Kaposi'ssarcoma and lymphomas have further added to the challenges of managing patients with HIV and pulmonary disease.

Despite the supremacy of Medicine over all the other professions, one notes that the recent advances in Engineering and biotechnology have contributed to the discovery of new viruses with epidemic potential that threaten global health security. These include severe acute respiratory syndrome-coronavirus (SARS-CoV), avian influenza viruses H5N1, H7N9, and H10N8, variant influenza A H3N2 virus, swine-origin influenza A H1N1, human adenovirus-14, and the Middle East respiratory syndrome-coronavirus (MERS-CoV).[4]These threats coupled with the emerging antibiotic–resistant bacteria, multidrugresistant tuberculosis and Azole resistant fungi have further complicated the life of clinicians dealing with pulmonary disease in the era of HIV.[5]

The article by Mateo and Colleagues on the aetiology and presentation of pulmonary disease in HIV infected patients at the University Teaching Hospital raises food for thought and needs to be put into perspective. It has emphasised the complexity of diagnosing pulmonary disease in immunocompromised patients. Further, it has raised the issue of the existence of duo or more pathogens causing pulmonary disease. The article also highlights the role bronchoscopyand other investigations can play in diagnosing pulmonary disease. As we read through the article, several questions went through our minds and we recalledvisits to the health posts and rural district hospitals under the Federation of Health Institutions (FHI) specialists' outreach programme. Will those serving in these outpostsever see and use a bronchoscope to assist in diagnosing pulmonary disease? Given the state of ourhospitals with regard to infection prevention and emerging new pathogens, are our clinicians safe from nosocomial infections?

In the absence of adequate infection prevention measures, is the bronchoscope the best tool for the diagnosis of pulmonary disease? What if the isolated pathogens where MDR-TB or worse still extremely drug resistant TB? What would become of our clinicians who

are trying the very best under difficult circumstances? Yes indeed a bronchoscope is a good diagnostic tool, but only if the users are protected. What then ought to be done in resource limited settings? First and foremost, it must be emphasised that since medicine is still considered an art,a detailed history must be taken and a good physical examination performed so as to narrow down on the differential diagnosis. Secondly, the diagnosis must be confirmed without any danger to the clinician. Simply put, this entails that one must use a rapid, cheap, sensitive, specific and easy to use diagnostic test. Such a test should be able to determine the sensitivity to antibiotics of a given pathogen, easy to transport and should operate without electricity or be battery-driven or solar-powered.[6]As can be seen from the article by Mateo and Colleagues, the endoscopic investigations will, for a long time, be confined to specialised centres where the expertise is available.

There are now on the market, a number of commercial diagnostic tests and platforms that fulfil the above criteria and promise to reduce the turnaround time for diagnosis. Generally these tend to be automated or semi-automated systems or kits that involve sample preparation, pathogen detection and determining the sensitivity pattern. Depending on thetests used, one is able to detect multiple pathogens and antimicrobial resistance.[6]

The work by Mateo and Colleagues has highlighted the complexity of identifying the causes of pulmonary disease in HIV disease. What is needed at any point of care is a rapid test which can, from a single sample; distinguish the different causes and sensitivity. Such a test would improve patient outcomes as the clinicians would make specific diagnosis and offer correct treatment. This would further reduceon the wastage of drugs. We are convinced that such a test is feasible with the advances in technology we are now witnessing. As we battle with respiratory pathogens it will be folly to ignore the emerging threat from other viruses such as Ebola and Marburg which have infected humans from other primates. There is need to invest in basic science research in our Country.

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