SHORT COMMUNICATION

MANAGEMENT OF TB IN THE WAKE OF MDR-TB AND XDR-TB IN SUB-SAHARAN AFRICA: HOW PREPARED ARE WE?

Willie A. Githui,

PhD Centre for Respiratory Diseases Research, Kenya medical Research Institute.P.O. Box 47855 00100-GPO, Nairobi, KenyaEmail:wgithui@yahoo.com

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Tuberculosis (TB) is an important public health problem worldwide. Several countries in the African region bear the brunt of the TB burden being among the 22 high TB burden countries with the incidence ranging between 150 and over 350 per 100,000 population [*WHO 2011*]. Before the advent of HIV/AIDS, the incidence of TB was on the decline globally. Effective treatment is possible if TB infected persons are detected early and put on TB treatment immediately. However, the arrival of HIV/AIDS has complicated the diagnosis and management of TB with associated emergence of MDR-TB and XDR-TB in the region.

In this issue, several papers address pertinent TB issues from different parts of the African region. Three papers address the problem of drug resistance in Kenya. Two of these, by Asiko *et al.,* specifically point out findings in retrospective studies involving well characterized archived isolates collected in the pre-MDR-TB era already indicating the emerging resistance in second line drugs namely ethionamide and the fluoroquinolones. This is an obvious course for concern to the TB control programme also reported in the third paper, by Ogaro *et al.,* indicating high levels of drug resistant TB in Nairobi showing prevalence of 0.54% and 8.54% MDR-TB of among new and previously treated patients, respectively. This is an indication that MDR TB in Kenya, like most African countries, is now a reality and the situation requires urgent and concerted effort to contain it. Spread of drug resistant strains of *Mycobacterium tuberculosis* and the management of patients diagnosed with drug resistant disease is one of the most formidable obstacles faced by national tuberculosis control programmes, compounded by a critical lack of appropriate diagnostic tools and vastly inadequate laboratory capacity.

Conventional culture and DST methods [*Canetti, 1969, Palomino, JC. 2008, 2010*], require prolonged periods to confirm mycobacterial growth and detect drug resistance, during which time patients may be inappropriately treated, drug resistant strains may continue to spread, and amplification of resistance may occur. Rapid diagnosis of TB and drug resistance will therefore have obvious patient- as well as public health benefits, including better prognosis, increased survival, prevention of acquisition of further drug resistance, and reduced spread of drug resistant strains to vulnerable populations.

In another paper by Nyamagoba *et al*, also from Kenya, the authors indicate high rates of recurrent TB independent of HIV infection, in the western part of the country. These observations are in contrast with previous studies that have shown HIV infection as a risk factor for recurrent TB as well as low rates of recurrent TB after curative treatment with short-course chemotherapy. Although the current study did not expound on the possible reasons including diagnostic, and/or treatment issues for these differences, there is need for further studies to elucidate this issue for better patient management.

Reports from Nigeria indicate influence of weather parameters on the morbidity pattern of pulmonary tuberculosis (PTB) in the rain-forest and guinea savanna zones of the country. In their study, Oguntoke *et al.,* concluded that intervention strategies for PTB control should be sensitive to seasonal characteristics for optimum outcomes.

In sub-Saharan Africa sputum smear microscopy is the cornerstone for TB diagnosis especially at peripheral health services. This method is rapid and inexpensive and highly specific for *Mycobacterium tuberculosis* in high burden settings. However, it has a limitation of low and variable sensitivity, exacerbated in high HIV prevalence settings [*Elliott AM, et al. 1993*]. High TB-HIV co-infection rates and consequent low TB case detection rates impede disease control in many TB endemic settings, notably sub-Saharan Africa *[WHO 2011]*. In addition, sensitivity is largely determined by the duration of microscopic examination. Where workloads are high and the amount of time spent examining smears is low, further compromising the sensitivity [*Cambanis A, et al. 2007*].

In an attempt to collectively and objectively address the regional TB threat, two major projects are currently being rolled out. In the first, a selected number of new genotypic assays which have previously been developed to detect resistance faster *[WHO 2008* Catharina C, *et al. 2010]* than using phenotypic ones, have been identified for evaluation of their impact on patient important health outcomes in a World Bank supported East African Public Health Laboratory Networking Project (EAPHNP) involving five countries namely Uganda, Tanzania, Rwanda, Burundi and Kenya. The overall EAPHLN project objective is to support establishment of a network of efficient, high quality, accessible public health laboratories for the diagnosis and surveillance and of TB and other communicable diseases in these countries. In the second, WHO Regional Office for Africa (AFRO) in collaboration Kenya Medical Research Institute, KEMRI, is currently rolling out a six weeks training course on management of joint drug resistant TB and collaborative TB and HIV/AIDS activities, in Nairobi, Kenya.The overall goal of the course is to further develop the skills especially of officials in charge of TB and/or HIV/AIDS control programmes who, operating at the national and sub national level, are responsible for planning, organizing, implementing and evaluating the activities of these programmes in the Anglophone speaking countries, based on strategies recommended by the World Health Organization. The Francophone version was launched in Benin in April 2011. It is anticipated that outcomes from these projects will contribute significantly to policy strategies on the management of TB cases in the African region.

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