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EDITORIAL

SOCIO-ECONOMIC AND DIAGNOSTIC ASPECTS OF TUBERCULOSIS IN PAKISTAN

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The World Health Organization (WHO) declared tuberculosis (TB) as a global emergency in 1993. It remains so as decade later. The pool of infection is maintained in magnitude by 4-5 million new cases and 3 million deaths every year.[1] The situation is volcanic for Pakistan. She ranks 8th in terms of estimated number of cases with an incidence of 175/100,000; a case notification rate of 23/100,000 in the year 2001, and a DOTS (Directly Observed Treatment Strategy) coverage and detection rate of 5.6%, which is well below the expected 24%.[2] This spectrum makes Pakistan alone being responsible for 44% of the total TB burden in the WHO Eastern Mediterranean Region, which comprises 23 countries.

Tuberculosis is considered the barometer of the social welfare status of a particular country.[1] The decline in the west started long before the advent of chemotherapy and was attributed to the improved quality of life in terms of hygiene and living conditions. The present western resurge is linked to a lethal opportunistic partnership with HIV/AIDS.[2] In 1966, WHO defined the point of control of tuberculosis as less than 1% tuberculin positivity among children in the age group of 0-14 years. No country has ever claimed to achieve this point. The control of tuberculosis depends upon an early diagnosis, correct treatment and maintained compliance with a considerably extended therapeutic regime. Pakistan has high defaulter rate which is still on the rise.[3]

TB is a disease with significant social aspects that influence compliance. It imposes a colossal economic burden in any society as more than three-quarter (8 out of every 10) cases occur in the economically productive age group i.e. 14-49 years. This is significant enough to crumble the economics of any social infrastructure. Added to this is the social stigma associated with the disease that also restricts the utility of this segment of population. However, the study presented by Makhdoom *et al.* in the current issue of this journal indicates a positive effect of this stigma. Among the factors, that influenced the decision to seek the treatment of tuberculosis, were the fears of infecting others and of losing jobs. The decisions of when, how, where and from whom to seek health care are significantly influenced by dominant family members in our society where the family is still a closely knit influential unit. This household decision-making influence is well highlighted in this study. The attitude and health awareness of the decision makers is even more important in case of the economically-dependant members i.e. the women and children. Once it is decided to seek care, the majority opts for private practitioners while staying away from the public health care institutions. This attitude calls for strengthening the public faith in the significance, utility, efficacy and cost-effectiveness of the present public health care infrastructure. This is important in view of the fact that only a small percentage of private practitioners can diagnose and correctly treat tuberculosis.[4]

The diagnosis of tuberculosis is based on the triad of clinical presentation, radiological findings and laboratory tests.[5] The presentation is not always the classic combination of fever, cough, hemoptysis and weakness for more than 2 weeks, duration in a young adult. It varies considerably with age. The elderly may present with atypical and non specific symptoms that may delay the diagnosis.[6] Paediatric tuberculosis, on the other hand, may be an asymptomatic primary infection or a progressive pulmonary tuberculosis or extra-pulmonary disease including lymphadenitis, meningitis or osteo-articular involvement.[7] Infact long-standing lymph node enlargement is suggestive of a tuberculous etiology by Rizvi *et al.* in the present issue of JCPSP. The females may harbour a silent genital infection to present with infertility.

Radiology has remained a cornerstone of the diagnosis. The chronic fibrocavitary-calcified infiltrations with characteristic zonewise distribution and effusions on the chest x-rays are classic appearances. Not to be ignored are the disc involvement with a collapsed vertebrae; the distorted and contracted ileocecal region; the basal meningitis and the lytic-sclerotic calcified patterns of osteo-articular disease which are all too familiar not only to the Radiologist but also to the experienced clinician practicing in an endemic area. Radiological diagnosis alone, however, is only presumptive. Variations exist that may further be compounded by coexisting pathologies such as mycetoma formation in tuberculous cavities, superimposed infections or even HIV. Infact the MMR (mass miniature radiography) was abandoned in the 1970's by the WHO Expert Committee on Tuberculosis, due to the high cost of procedure with lack of definitiveness. The definitive diagnosis, therefore, remains laboratory based. The disease is paucibacillary with subsequent difficulty in having a positive microscopy for acid fast bacillus (AFB), yet 60% of the primary physicians ask for sputum microscopy as the primary investigation for tuberculosis.[3]

Due to advancements in culture techniques, AFB culture is now 80-85% sensitive and 98% specific. However, the drawback of long duration required is still a hindering factor. Histopathological demonstration of the epitheloid granuloma with caseation is suggestive but again not definitive.[8] The once popular, tuberculin skin test (Mantoux's test) is now basically used as an indicator of the prevalence of the disease in a population. New diagnostic tests have been developed in research and reference laboratories that basically utilize techniques such as the polymerase chain reactions and other micromolecular techniques as mentioned in the enlightening review by Butt *et al.* Some of these tests are now available in commercial

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laboratories in Pakistan. However, to replace the conventional microscopy and culture techniques, these tests have to be at least as sensitive and specific as the former, not to forget the cost effectiveness. It should be remembered that 95% cases of tuberculosis occur in the developing world, including Pakistan, where facilities for diagnosis are neither always available nor affordable.

Considering the present state of low detection, high prevalence, non-compliance and drug resistance, all coupled with nonspecific social determinants, the ambitious goal of 100% DOTS coverage by the year 2003, envisioned by the National Tuberculosis Control Program, remains elusive.

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