

Multi-Drug Resistant Tuberculosis

Madam, Tuberculosis is still the leading cause of death world wide, being responsible for 8 million new cases and three million deaths annually¹. Apart from many other factors the problem of increasing incidence of multi-drug resistance contributes to compromise the tuberculosis control programmes. Multi-drug resistant tuberculosis (MDR-TB) means resistance of mycobacterium tuberculosis to both rifampicin (RPM) and isoniazid (INH) with or without simultaneous resistance to other drugs². Multi-drug resistance is ubiquitous and globally about 10% of the isolates are resistant to at least one drug. The incidence of MDR-TB is 0.2% in primary cases and 4.4% in previously treated patients³. Resistance pattern of the mycobacterium tuberculosis isolates was studied at the Department of Pathology, PNS Shifa (Naval Hospital), during 1996-99. A total of 83 mycobacterium tuberculosis strains were isolated from 616 different clinical specimens with a positivity rate of 13.47%. All the isolations were made on solid media i.e., Lowenstein Jensen (L.J.) slopes. Due to the availability of limited resources, the antibiotic susceptibility pattern of only 26 isolates from previously treated cases could be studied. Antibiotic susceptibility testing was performed by resistance ratio method using antibiotic containing L.J. slopes (Mast Diagnostics). The drugs studied include streptomycin (STR), RPM, INH and ethambutol (ETH). Mycobacterium tuberculosis strain H37Rv was used as a control. Single drug resistance was found in 6(23.07%) isolates, two drug resistance in 5 (15.38%), three drug resistance in 3(11.53%) and four drug resistance in 4 (15.38%). Eight isolates (30.76%) were found MDR and the same number of isolates was susceptible to all the drugs. Individual drug resistance was 30.3 1% for STR, 38.47% for RPM, 53.85% for INH and 34.62% for ETH. Overall 69.23% of the isolates were having resistance to one or more drugs. These figures of resistance are alarmingly very high. The most probable reason for this is that all these cases were already on anti-TB treatment, so these are the cases of acquired resistance. A similar high resistance of 50% to one or more drugs and MDR of 12% have been reported from Ethiopia⁴. The magnitude of drug resistance is not fully known in five countries having the highest incidence of tuberculosis worldwide: India, China, Indonesia, Bangladesh and Pakistan⁵. It is extremely important to monitor and control the drug resistant tuberculosis because in addition to the high morbidity and mortality, heavy cost is incurred on the treatment of such cases. These can also lead to outbreaks of MDR-TB. To achieve this goal, it is recommended that TB diagnostic references laboratories should be established at least at provincial levels. These laboratories should be able to isolate, identify and do the antibiotic susceptibility tests of the mycobacteria by one of the rapid techniques (Bactec). It will be better if these laboratories also have the facility of molecular techniques (Polymerase Chain Reaction). All the major hospitals should be able to isolate the mycobacteria on solid media and send these to the reference laboratories for identification and antibiotic susceptibility testing. The data of drug resistance should be monitored at provincial level by collecting information from the other laboratories performing antibiotic susceptibility tests. All this data should be centralized with the tuberculosis control programme of Pakistan. In this way once we know the magnitude of the problem in terms of prevalence of MDR-TB in different areas of Pakistan, it will be much easier to plan the control and prevention strategies.

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