Prevalence and Pattern of Acquired Drug Resistance in Tuberculosis Including MDR-TB in Bihar

Sir,

Acquired drug resistance to tuberculosis is on rise in India. Figures from 54% to 81% have been reported recently.\(^1\) To know the prevalence and pattern of drug resistance of TB patients in Bihar, the present study was conducted in Nalanda Medical College Hospital, Patna, from September 1998 to September 2000. After diagnosing TB, the patients were categorized from I to IV complying with the WHO guideline. Only category II (relapse, treatment failure and defaultation) and category IV patients (chronic cases) were included in the study. Total number of patients was fifty, forty category II and ten category IV patients respectively. Category I and II patients consisting mainly of fresh sputum positive and negative cases respectively, were excluded, as they were likely to have primary resistance, not acquired resistance. The culture and sensitivity test of sputum for AFB was done by Lowenstein Jensen Method. Drugs tests were Streptomycin (S), INH (H), Rifampicin (R), Ethambutol (E), Pyrazinamide (Z), PAS (P), Ethionamide (N), Kanamycin (k), Ciprofloxacin and Roxithromycin.

Nine patients (18%), out of fifty, were sensitive to all the drugs tested. Forty-one (82%) were resistant to 3 to 6 drugs concomitantly. Resistance to one or two drugs was not seen. Three drugs were resistant in 9 (18%) cases. Most commonly involved drugs were SRH. Resistance to three drugs had been reported in 28% of TB cases from Haryana in 1998.\(^2\) Maximum number of patients, 17 cases (34%) were resistant to four drugs simultaneously. Commonly involved drugs were SHRE (16%) and SHR (14%). Resistance to 5 and 6 drugs were seen in 22% and 8% cases respectively mostly from category IV (chronic) patients. Resistance to Kanamycin, Ethionamide and Roxithromycin were seen in these patients. Resistance to Kanamycin is, probably due to cross-resistance to Streptomycin. INH resistance predicts Ethionamide resistance as both are chemically related. High resistance to Roxithromycin makes it less effective second line anti TB drug.

INH resistance was in 40 (80%) cases, the highest rate in India. It implies that continuously multiplying bacilli would be alive. Earlier the highest INH resistance was 72% in Haryana in 1998. Rifampicin was resistant in 38 (76%) cases, again the highest rate in India. Rifampicin is the most effective sterilizing drug. Its effectiveness makes short course chemotherapy possible. Within six year of its introduction, acquired resistance to Rifampicin rose from 2.8% in 1980 to 37.3% in 1986 in Gujarat and from 3.17% in 1980 to 49% in 1998 in Haryana.

Resistance to both INH and Rifampicin along with other drugs i.e., Multi Drug Resistant (MDR) TB was found in 36 (72%) cases. Out of 40 cases of INH resistance, 36 (90%) cases were MDR-TB. Similarly, out of 38 Rifampicin resistant cases 36 (94.7%) were MDR-TB. In 1998, reports from Haryana revealed similar facts. By effectively sterilizing the bacilli, both INH and Rifampicin prevent emergence of resistant strains to other anti TB drugs. It is unlikely that in the near future, a new anti TB drug as effective as Rifampicin would be available.\(^3\) Due to high Rifampicin resistance, TB treatment in Bihar would be effectively in effective. Emergence of HIV infection will make the situation worse.

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REFERENCES