DOTS in Pediatric Patients

In the September issue of Indian Pediatric there were three different and interesting articles on practicing DOTS in pediatric patients. Although these articles tried to cover whole range of issues *i.e.*, diagnosis, categorization and treatment, yet there are certain issues that remain unclear and require further analysis.

1. Suggestion of adding fourth category for pediatric patients needs further research, as there is not any specific indicator or added benefit of using second line of drug in pediatric patients. If we consider irregular treatment as the base for development of drug resistance with first line drugs then the chances of a pediatric patient to develop drug resistance to first line of drug is much less than an adult patients. Instances have shown that even those adult patient with history of much more irregular treatment schedule or history of relapses after full course show improvement and cure under DOTS.
2. The second suggestion given in report for changing the regimen to second line drugs in case 'the patient did not improve or deteriorated with 5 drugs in 2 months' looks like a premature decision of shifting the patients. A point mentioned in the study(1) to recategorize new patients as treatment failure just after 3 months of intensive treatment is also not justifiable. The indication of 'good compliance' is not rational as the drugs were dispensed for a period of one month for home and how could a doctor be sure about good and bad compliance (rely on personal understanding?)
3. This study has advocated increasing the duration of TB treatment in some specific patients, but research(2) show that if the treatment is followed without fail under DOTS then there is no added advantage of increasing duration of all or one or other drugs.
4. The same study has also emphasized the necessity of adding preventive treatment for pediatric patient under present DOTS schedule, but ignored the fact that the treatment of latent tuberculosis is well within the RNTCP guidelines (based on researches in TOMAN). Under DOTS all children below six years who are in direct contact of any sputum positive case have to be put on six-month daily dose of Isonex as 5 mg per kg of body weight.

Based on these issues it is required that for diagnosis of pediatric TB the earlier proven scoring system could be used (or any new tools), but as per the treatment practices concerned all these patients could easily be categorized in 3 standard (WHO suggested) categories as given in the paper. However, for fourth category they could be treated under Cat II with 5 drugs successfully and DOTS should be followed in all such cases for definite cure.

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Reply

Our response to comments by Dr. Joshi are as follows:

1. Need for Category 4: We agree that with DOTS, resistant TB can be decreased

significantly. However, it will not disappear completely. Drug resistant TB in children is reflection of drug resistant TB in adult patients. As long as there are adults with multidrug resistant tuberculosis, there will be cases of MDR tuberculosis in children and that justifies need for category 4 in the treatment strategies.

2. Decision to change regimen if no response by 3 months of intensive phase: No response after the 3 months of intensive phase may be due to poor compliance, drug resistance or wrong diagnosis. The compliance in children is likely to be better as parents or guardians supervise the drug administration. Involving household members for drug administration has been documented to show efficacy similar to that of health care workers in DOTS centers(1). The disease in children is more likely to be disseminated than adults. It is not desirable to delay changing the regimen beyond three months in children who are not responding to a regimen they are adhering to. Delay may cause serious disease in form of CNS tuberculosis. Of course it does not mean that one will forget about the adherence and microbiological documentation of drug resistance in *M. tuberculosis*.

3. We have already clarified this in our article(2). We add that an evidence-based guideline is required for the management of patients who continues to develop new lymhnodes/tuberculoma or non-resolution of *X*-ray findings.

4. Preventive chemotherapy (chemo-prophylaxis): We agree with Dr. Joshi regarding the existence of the guidelines. The recommendations for childhood tuberculosis by RNTCP(3) has included 6 months of daily Isoniazid as preventive therapy. However, it remains grossly underutilized in the program. Efficacy of 12 months daily therapy with isoniazid as chemoprophylaxis in developed countries has been well established. Data about efficacy of chemoprophylaxis in developing countries are limited and recommendations of professional bodies are not uniform. The British Thoracic Society recommends either 6 months of isoniazid alone or 3 months of isoniazid and rifampicin for chemo-prophylaxis in children(4). The Indian Academy of Pediatrics recommended 6 months of isoniazid and rifampicin for preventive therapy(5). However, the efficacy and feasibility of these have not been studied. Therefore we feel there is need to develop an effective and shorter duration of chemoprophylaxis.

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