

To Be or Not To Be and TB or Not TB?

Controlling tuberculosis in India is a challenging task. Several changes have been observed in the epidemiology, clinical manifestations, diagnosis and treatment of tuberculosis. Emergence of HIV epidemic and drug resistance has compounded the challenge. With increase in number of diseased adults and spread of HIV infection, the infection rate in children is likely to increase, especially for disseminated variety. The annual rate of infection in children in developing countries comes to around 2.5% or more. Nearly 8-20% of the deaths occur in children. Lymph node tuberculosis has increased over past two decades. The rates of drug resistance vary from 20-80% in different geographical regions.

Recent years have witnessed tremendous strides in economic and social development in India including the health care sector. Because of technological advancement and globalization, there is ready availability of a large number of expensive new drugs and vaccines that are doing brisk business in the Indian market. However, this progressive trend is marred by our inability to close the chapter on several old problems. The persistence of poliomyelitis in our country is a stark reminder of this. This is exactly the case with tuberculosis also, a disease which continues to exact a substantial toll in terms of morbidity, mortality, economic loss and adverse impact on quality of life. Against this background, one is reminded of the famous Shakespearean quote, "*to be or not to be, that is the question*". I believe that this stands true for our academic body in the context of tuberculosis as well, since the disease reminds us (rather mocks at us) our inability to control it despite tremendous progress in scientific and economic spheres. I believe that as fellow academicians we should jointly pledge ourselves to ensure that tuberculosis is 'not to be'. The following key priorities come to my mind.

DIAGNOSIS OF TUBERCULOSIS

There is perhaps no disease whose name is as misused

or abused as tuberculosis. This is evident from the fact that treatment for tuberculosis (popularly called ATT or anti-tubercular treatment) is initiated very frequently, often without waiting to even try and confirm the diagnosis. This leads to two problems; first the neglect of several other conditions that cannot be treated with ATT and second the emerging problem of multi-drug resistant bacilli. Of course, it is easily appreciated that diagnosis is fraught with two major limitations, one being that there is no 'gold-standard' test for tuberculosis and second, the current gold standard—*Mycobacterium* culture—is time-consuming, cumbersome and often unrewarding in children. Tuberculosis is thus often diagnosed (rather confirmed?) retrospectively by varying degrees of clinical response to therapy. Therefore the debate of 'prove and treat' versus 'prove by treating' continues, with 'purists' leaning towards the former and 'practicalists' preferring the latter. The situation is not helped by the presence of a large number of fairly expensive 'diagnostic tests' such as ELISA, PCR, Quantiferon *etc.* because a positive result does not always signify presence of disease and likewise a negative test does not necessarily mean absence of the disease. In such a situation, perhaps the middle path is the most appropriate, wherein pediatricians should make every effort to confirm the diagnosis by a thorough clinical evaluation and relevant investigations (formal reporting of radiographs, induced sputum sample for culture, gastric lavage specimens, aspiration of lymph nodes, CSF analysis, family screen *etc.*) and then start ATT. When ATT is started, we must ensure that children are followed up serially to assess the response and be prepared to stop therapy and investigate further, if this does not happen.

TREATMENT OF TUBERCULOSIS

It is disheartening to observe so much error in prescribing anti-tubercular therapy, in terms of choice of drugs, dosages, duration of therapy, monitoring during therapy, decision to change treatment, assessment of compliance and perhaps most important, the decision to withhold or stop treatment.

We members of the Academy should update and refresh ourselves about the principles and practice of rational anti-tubercular therapy. I sometimes wonder whether the relative academic apathy towards ATT is related to the limited push from industry and consequent paucity of discussion at most scientific fora.

In terms of therapy, another important consideration is compliance to treatment. Quite often, treatment is properly initiated but compliance is limited for a variety of reasons. It is not clear whether the DOTS (Directly Observed Treatment Strategy) under the RNTCP (Revised National Tuberculosis Control Program) has made a significant impact in the treatment of childhood tuberculosis, because all said and done, the success of DOTS also depends entirely on compliance; in this case compliance of the family in visiting the DOTS center regularly. Perhaps, this is an appropriate area for operational research that can really benefit the country's children. Otherwise, the DOTS program also may become like the routine immunization program – *available, accessible and affordable, but underused.*

PREVENTION OF TUBERCULOSIS

Despite improvement in living standards, education level and income, there seems to have been little progress in the principles governing primary prevention of tuberculosis. We continue to use the age-old BCG vaccine as the single intervention for primary prevention. The efficacy of BCG varies between 0–80%. Every year, we continue to use at least 25 million doses of a vaccine whose efficacy is unclear and that too for a disease that takes a high toll.

Despite this scenario, it is recommended that all newborns receive the BCG vaccine so that at least some protection is afforded against the more serious forms of the disease.

Why is there such limited progress towards the development of a better vaccine? Could it be that limited interest of developed nations as well as the pharmaceutical industry is responsible for this? This certainly seems to be the case because while industry is tripping over themselves (and each of us) to 'provide' expensive new vaccines for the 'benefit' of the country's children, there is no interest in developing a more efficacious vaccine for tuberculosis. Limited research undertaken in our country and abroad also does not offer much hope, at least in the near future.

WHAT IS THE WAY FORWARD?

Later this month, IAP is organizing a national consultative meet of experts, drawn from all over the country to deliberate on some of these issues in order to try and better the lot of children in India. It is entirely possible that this meeting will throw up more questions than answers—however this is itself a first step that suggests that we are all thinking actively. Let us as fellow academicians resolve that when tuberculosis throws its challenges, we are united in our stand that it is a disease which is 'not to be'? Let's hope, tuberculosis is bound to go with integrated efforts of all concerned.

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