

TUBERCULOSIS GENERAL

074: CHILDHOOD TUBERCULOSIS TODAY

P Jagota, HV Suryanarayana and VK Chadha: Journal of Internal medicine of India 1997, 8, 121-124.

TB is one of the main causes of mortality in the developing countries. Although most of the patients of TB are adults, it also affects children. Serious forms of TB like TBM and miliary TB contribute to deaths in significant numbers among the children. TB is transmitted to children from adult sputum positive pulmonary TB cases. Control of TB in children will depend upon the proportion of smear positive cases detected and properly treated. The problem of TB in children reflects that of TB in adults. Even though, the diagnosis of TB in children poses a great challenge, chemotherapy is capable of curing TB in all the diagnosed patients complying with prescribed period of treatment.

The disease can be classified into two types (1) Childhood form of TB which includes primary and miliary disease of lungs and all types of extra pulmonary TB such as pleural effusion, TBM, TB Spine, Renal TB, Tuberculous lymphadenitis etc., (2) Adult form of TB which occurs mostly in the lungs as a result of either reactivation of primary infection or re-infection.

The prevalence of infection among children has been observed to vary from place to place and prevalence rates of 5-10% on an average have been observed in various surveys carried out in different parts of the country. In all the surveys, infection rates were found to increase with age, being the lowest in the age group of 0-4 years. The precise estimates of the magnitude of TB disease in children are difficult to obtain. In most community based surveys the children below 5 years of age are not included and very little information is obtained from hospital based records. In rural areas of Bangalore, Prevalence rate of Pulmonary TB among children (5-14 years) was observed to be 0.3%, one-sixth of that in adults. The prevalence of bacillary disease was observed to be 0.1%. Almost similar rates of disease were obtained from urban slums of Bangalore and peri-urban areas of Bangalore in 0-14 years of age group. The morbidity among children depends upon the age of primary infection, history of contact, nutritional status etc. A higher incidence of the disease has been observed among infected children with tuberculin reactions of 20 mm or more. This risk is highest in the immediate period following infection.

Little is known about TB mortality rates in children. However, crude mortality rates have been reported to be higher in the infected group of children.

Diagnosis of childhood TB is based on the presence of generalized symptoms, symptoms related to the organ involved and a very high index of suspicion about the disease in an individual child. Cough is not a prominent symptom and haemoptysis and other chest symptoms are also very rare. There is no single specific test to diagnose childhood TB, hence, use of single or few tests often leads to over diagnosis. To minimize over diagnosis it is necessary to diagnose TB in children in an objective manner by taking detailed history, by applying a battery of tests like tuberculin tests, clinical, X-ray, bacteriological, histopathological examinations and finally applying the scoring system.

All children should be treated effectively with proper combinations and dosages of drugs. The prevailing regimens using the dosages per kg body weight are usually adequate for treating any kind of TB.

Routine chemoprophylaxis for TB has not been recommended in the program. But it can be offered on individual basis to the high-risk group of children. Thus, newborns and children below 6 years of age who are asymptomatic and exposed to smear positive pulmonary TB can be given chemoprophylaxis after excluding active disease in them. INH in the dose of 5mg per kg body weight is used for chemoprophylaxis. In case of children infected with HIV infection, it is recommended to give INH chemoprophylaxis for 12 months.

Various trials across the world have shown varying degrees of efficacy of protection with BCG vaccine from 0-80%. A significant rise in the incidence of TB among children has been observed after discontinuation of BCG vaccination programmes in some of the developed countries. Therefore, it appears that BCG gives protection against childhood form of TB. Presently, BCG vaccination is continued in India with some modification in its policy with age etc. BCG is given as a part of UIP.

The precise quantification of TB problem among children is more difficult. It is estimated to be much less compared to adults. However, with the introduction of the new risk factors like urbanization and demographic changes, the problem of TB is likely to be aggravated in

the coming years. It is much easier to prevent than to treat some serious forms of TB, which can lead to disability and death. By giving priority to smear positive cases in the programme, the childhood TB automatically gets priority.

Key Words: *Childhood Tuberculosis; Morbidity; Mortality; Diagnosis; Treatment; Chemoprophylaxis; BCG Vaccination; Control.*

075: PREGNANCY AND TUBERCULOSIS

P Jagota: Journal of Internal medicine of India 1997, 8, 119-120.

In spite of tremendous advances in chemotherapy of TB, pregnancy among TB patients is dreaded even today. Most physicians still advise women not to conceive during active disease and if conceived to get an abortion done. Physicians continue to give such advice due to lack of information. This article gives guidelines for dealing with such situations.

Available data indicates that incidence of TB could be higher in pregnant women than in the general population. TB seldom has any deleterious effect on pregnancy and generally the baby is healthy at birth. Premature births are related to the severity of the disease in the mother and due to her impoverished nutritional status. Congenital TB is a rare complication of maternal TB. The placenta usually serves as a strong barrier against tubercle bacilli. But in few cases severely damaged placenta can allow haematogenous spread along the umbilical vein. A newborn baby is at a greater risk of acquiring TB post partum especially if the mother is suffering from smear positive and untreated disease.

It was generally believed that the pregnancy aggravates pulmonary TB. Deterioration was said to take place in the early months due to hyperemesis and later in the puerperium. Studies in recent years have shown that uncomplicated pregnancy does not affect the course of pulmonary TB and pregnancy is not contra-indicated unless the TB lesions are very extensive. The prognosis in pregnant women with extensive active lesions is no worse than in a non-pregnant patient with the same type of lesions. However, all these conclusions are valid only when proper medical care is available for the treatment of TB and complications of pregnancy, if any.

Pregnant women with TB should be treated without delay, diagnosis being ideally based on sputum smear

examination. With the advent of highly bactericidal drugs like INH and Rifampicin, the pregnant women can be treated with 6-9 months SCC regimens. No teratogenic effects have been reported with INH and Rifampicin. Streptomycin and related group of drugs are contra-indicated. Till date, no congenital malformation has been reported with use of Pyrazinamide. Breast-feeding should not be discouraged in mothers receiving anti-TB drugs. Newborn babies should be treated appropriately as soon as diagnosis is made, the basic principles of treatment remaining same as for adults. However, Ethambutol should be avoided.

All anti-TB drug regimens can cause adverse reactions. These are usually minor but they can be occasionally serious and rarely life threatening. Clinicians should be aware of the reactions, which can occur and know how to manage them and weigh the benefit versus risk to the patient.

Compliance to therapy is the major problem in TB treatment. In developed countries non-adherence to treatment is to the tune of 20%, while in developing countries this is to the extent of 50%. Non-compliance can be improved by repeated motivation, timely default retrieval actions and providing efficacious SCC regimens free of cost through the TB control Programme.

The patient may be advised to postpone pregnancy till the TB treatment is completed successfully. Therapeutic abortion is not advised for women developing TB during pregnancy. Pregnant women having chest symptoms or symptoms related to other organs should be investigated for presence of TB and managed efficiently by providing proper treatment.

Key Words: *Pregnancy; Tuberculosis; Management of Disease; Compliance.*

076: TUBERCULOSIS CONTROL AND ECONOMIC ISSUES

VK Chadha, PS Vaidyanathan and S Singh: NTI Bulletin 1999, 35, 3-7.

Tuberculosis is the world's leading killer among infectious diseases. It is responsible for 6.7% of all deaths and 18.5% of deaths of people in the age group of 15-59 years. The brunt of the disease burden is borne by those in the 15-59 year age group. No country can afford to lose its citizens in the prime productive years of their life. TB also kills more women than all other infectious diseases and all causes of maternal deaths combined. There

are few studies on the actual cost or consequences of TB on the family, community and the overall economy of our country. The economic consequences of TB are enormous. The magnitude of economic losses to the nation can be gauged from the fact that TB is the single largest cause of DALYs among adults in developing countries. In India TB accounts for 3.7% of total DALYs lost. (One DALY is equal to one lost year of healthy productive life).

Most communicable diseases are associated with poverty, undernourishment, overcrowding and unhygienic living conditions. Many studies have shown that TB is concentrated in those belonging to lower socio-economic groups, those living in *kutcha* houses and having lower literacy levels. The advent of the HIV epidemic has facilitated return of TB in wealthy countries and is expected to worsen the situation in poor countries. This upsurge in HIV related TB incidence would make the economic burden of TB much greater. Nearly 50% of TB cases report to Government health facilities for seeking relief but they are often not diagnosed. This leads to economic loss in terms of wages, production and expenses on general antibiotics, X-rays and so on. Anti-TB drugs, though provided free under NTP are in short supply, which leads to irregular and inadequate treatment and also encourages default. All these impose indirect costs to patients leading to debts and insecurity about their future. Incomplete and inadequate treatment increases the likelihood of MDR-TB. The cost of treating MDR-TB is beyond the scope of any health programme. SCC was introduced to overcome the problem of default. Though costlier, SCC leads to better patient

compliance and higher cure rates and cost per death averted is lower when compared to the long course regimens. Quality control of drugs and more funding for the programme are important urgent requirements.

Supervision of anti-TB treatment has been recognized as an important aspect of TB control and the performance of DOTS strategy under RNTCP that is being expanded in a phased manner has been encouraging. DOTS minimizes deaths due to TB and averts hospitalization. In India it has been estimated that for every 1% of GDP spent on DOTS, there would be a return of 8% per annum. Analysis of TB control programmes in some African countries has shown that treating smear positive TB costs around 20-57 dollars per death averted and the cost per discounted year of life saved is less than 10 US dollars. Hence, there are very few interventions that are as cost effective as anti-TB treatment. Therefore, TB control interventions must be intensified considering the enormous burden imposed by TB both in terms of suffering and the socio - economic impact on our country. Since TB control activities are also one of the most cost effective interventions, appropriate actions aimed at reducing the enormous burden of TB must be accorded the highest priority. For this, strong political will and advocacy are required to highlight enormity of the problem due to TB for allocation of appropriate budget for TB control programmes.

Key Words: *Health Economics; Constraints; SCC; DOTS; Financial Support.*

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