Current Status of Tuberculosis and Acute Respiratory Infections in India: Much More Needs to be Done!

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Tuberculosis (TB) continues to remain one of the most pressing health problems in India. India is the highest TB burden country in the world, accounting for one fifth of the global incidence - an estimated 1.96 million cases annually(1). Approximately 2.9 million people die from tuberculosis each year worldwide; about one fifth of them in India alone(1). Nearly 500,000 die from the disease – more than 1000 per day–one every minute(2). The disease is a major barrier to social and economic development. An estimated 100 million workdays are lost due to illness. The society and the country also incur a huge cost due to TB–nearly US$ 3 billion in indirect costs and US$ 300 million in direct costs(2). The situation is more complicated considering that TB disproportionately affects the young population in India. TB mortality in the country has reduced from an estimated 42 per lakh population in 1990 to 28 per lakh population in 2006, and the prevalence of TB in the country has reduced from 568 per lakh population in 1990 to 283 per lakh population by the year 2007(1).

Annual rate of tuberculosis infection (ARTI) is a most sensitive indicator of prevalence of TB infection in a community. For adequate control of TB infection, we should have an average ARTI of about 0.07% below 14 years of age. A nation-wide survey among young children show very high figures of ARTI in almost all the regions- highest in north zone (1.9%) followed by west zone (1.8%), east zone (1.3%.) and lowest in the south zone (1.0-1.1%)(3). The results indicate a high rate of transmission of infection due to high load of infectious cases in the community.

ARI AND PNEUMONIA

Every year, acute respiratory infections (ARI- including both upper and lower) are responsible for an estimated 3.9 million deaths worldwide. It is estimated that Bangladesh, India, Indonesia and Nepal together account for 40% of the global ARI mortality(4). On an average, children below 5 years of age suffer about 5 episodes of ARI per child per year, thus accounting about 238 million attacks. ARI is responsible for about 30-50% of visits to health facilities and for about 20-40% of admissions to hospitals. It is also a leading cause of deafness as sequelae of acute otitis media(4).

ARI is one of the major causes of death. Hospital records from high mortality states show up to 13% of inpatient deaths in pediatric wards are due to ARI(4). According to recent WHO/Unicef data, about 20% of all deaths in children under 5 years are due to acute lower respiratory infections (pneumonia, bronchiolitis and bronchitis); 90% of these deaths are due to pneumonia. Studies have shown that up to 19% of children hospitalized with pneumonia die in India(5).

PROGRESS AND THE CHALLENGES

In terms of population coverage, India now has the second largest DOTS program in the world(2). The program has helped to achieve a case detection rate of 68% (2007) and a treatment success rate of 86% (2006). Treatment success rates have tripled from 25% to 86% and TB death rates have declined from 29% to 4% (2). On the other hand, there is little or no evidence that it has resulted in appreciable decline in the incidence of TB infection.

There are several challenges as India strives to achieve the objective of TB control, foremost being the threat of multi-drug resistance TB (MDR-TB). The problem of drug resistance has been further compounded with the emergence of extensively drug-resistant TB (XDR-TB), which is a subset of MDR cases with additional resistance to key second line drugs. In India, though the prevalence of XDR-TB is low but the potential threat is of real concern. Unregulated availability and injudicious use of the first and second line anti-TB drugs outside of RNTCP, along with non-existent systems to ensure standardized regimens and treatment adherence have been attributed for emergence of drug resistance TB.

The Revised National Tuberculosis Control Program is at best is only a "TB-treatment" program. The tool to ensure primary prevention i.e. an effective vaccine, is nonexistent. The program also does not envisage any measures to detect and actively treat latent infections–a very crucial pool of individuals responsible for circulating the bacteria amongst susceptible population. Until these two aspects are addressed, effort to contain or eliminate the disease would remain a mere rhetoric.

Despite being responsible for most under-5 deaths worldwide, there was no comprehensive sound strategy to specifically target pneumonia so far. The scenario was further compounded by lack of availability of authentic epidemiological data on the incidence and prevalence of different major pathogens responsible for pneumonia cases in the country. Recently, WHO and Unicef have jointly launched a Global Action Plan for Prevention and Control of Pneumonia (GAPP) to include a package of interventions to prevent most deaths from pneumonia among the most vulnerable groups(6). A package of $39 billion has been promised to implement the action plan in the 68 poor nations between 2010 and 2015. Half of this fund will be spent in India and China. The action plan aims to reduce mortality from pneumonia in the under 5s by 65% by 2015, reduce the incidence of severe pneumonia by 25%, and to reach 90% coverage of each relevant vaccine(6).

NEED OF THE HOUR

The case detection rates under RNTCP need to be improved further. The program has to be extended to the remaining population; and the private and non-governmental sectors have to be encouraged to follow national guidelines in case detection and treatment. Enabling and promoting research for the development of new drugs, diagnostic and vaccines along with operational research will go a long way to bolster, and improve program performance. The irrational and unsupervised use of anti-TB drugs needs to be actively discouraged.

The need of the hour is to undertake multi-pronged approach for preventing and treating pneumonia. Protection from malnutrition, pollution and overcrowding; prevention through effective mass vaccination; and treatment with appropriate antibiotics at facility and community level should be taken up as key activities.

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