Feature — Health

Tuberculosis Makes a Major Come-back

by Prof Habibuz Zaman

IF you take a walk in Dhaka or visit one of our many lush green parks, you would be aware of our rather widespread habit of coughing and spitting all over the place. You will perhaps agree that this indeed is a rather habit, which not only spoil the nasty looks of the place, but is also most unhygienic. God help you if any of the folks passing by you, is an open case of active tuberculosis of the lungs! Chances are not remote that the TB germ in the coughed-out sputum will survive for many hours even in the open. These may be carried in the air and cause infection when inhaled.

Quit spitting

It would be nothing short of a revolution, were all of us to quit the habit of indiscriminate spitting, except into appropriate receptacles. There is no great harm in swallowing one's own sputum or saliva! For God's sake, stop spitting in the living or working areas, and on the roads and road-side pavements. This single act of self-control may significantly reduce the spread of tuberculosis. Is it true that the Asian city state of Singapore imposes a fine on individuals caught spitting?

Avoid close contacts

The more dusty, dark and dingy a place is, the more likely are the tuberculosis bacteria to survive for longer. So it maybe a good idea to stay away from such places. Also avoid closed areas, which are congested and crowded with people.

Not without reason, that it is generally considered bad manners to cough or sneeze except into a handkerchief! Even talking to a TB patient may not be entirely hazard-free. Preferably, you would want to work and sleep in airy rooms, which have sufficient sunlight for several hours of the day at least.

Poverty predisposes TB

In economically distressed communities, it is not uncommon for several persons to share a room or even beds, placed closely to each other. This unhygienic practice is, in fact, widely prevalent among the low-income groups of our population, especially in urban areas, where rents are unusually high. Since close contact helps spread TB and some other diseases, would it not be useful for health authorities to find out how may poorly-paid workers of, say, garments industry share one small room? How about other wage-earners: factory workers, cycle-rickshaw pullers, push-cart drivers, and hundreds of thousands of low-paid employees of other non-formal, un-organised sectors of our labour force?

It is well-recognised that poor socio-economic and crowded living conditions predispose to a number of diseases including tuberculosis. Higher wages can translate into better living conditions, eating more nutritious food, and longer hours of rest and recreation. Improvement of the socio-economic status is undoubtedly the single most important factor in reducing the incidence of tuberculosis in a population. This was evident in wealthy industrialised nations long before the advent of streptomycin, the first specific drug for treatment of tuberculosis, discovered in 1944.

Boiled or pasteurised milk

For many years, we have been using imported powdered-tinned milk in Bangladesh, which is entirely save. Cow's milk must be well-boiled to get rid of cattle TB, bacteria, which can cause intestinal tuberculosis in man. Fortunately, this condition is much less frequent than TB of the lungs in Bangladesh, thanks to our widespread practice of boiling milk. The same objective is better achieved through pasteurization, a process consisting of quickly raising the temperature of milk to 72$_0$C and immediately cooling it down to 4$_0$C. This procedure kills tuberculosis and other bacteria. At the same time, the nutritional value of milk and its flavour are not affected.

BCG helps

The EPI or Expanded Programme of Immunization in Bangladesh is regarded as a rather successful programme in preventing six diseases — diphtheria, whooping cough, tetanus, poliomyelitis, measles and tuberculosis (BCG vaccine). These are administered to infants, before they reach to age of one year.

BCG protects children from disseminated or miliary TB and also from TB meningitis — both generally fatal ailments. Also tuberculosis in BCG-vaccinated adults is usually less severe. Therefore, it is most important that one should cooperate fully with health authorities in having infants immunized before the age of one year.

Health education is vital

Effective health education and public information efforts can spread the message that anyone, having a protracted cough, fever in the evenings, night sweat, chest pain, loss of weight and appetite and listlessness for more than a few weeks, needs to be examined by a physician. If so indicated, a chest X-ray must be taken and sputum-smear examination for the presence of TB, i e Acid Fast Bacteria (AFB) be done. In rural areas, such patients could be seen at the Thana Health Complex (THC), if facilities for X-ray and routine clinical laboratory examinations are available.

Chemotherapy: Multiple drug resistant TB (MDRTB)

Prior to their posting to the THC, medical officers my be given a crash, training course in the management of tuberculosis, especially in Short Course Chemotherapy (SCC) with a combination of drugs. This regimen of therapy has been recommended by the World Health Organization (WHO) for sputum-smear positive cases of TB. It generally produces a prompt improvement in the condition of patients. This treatment is given daily over a period of at least six months.

Incomplete therapy is worse than none at all, since it may give rise to multiple drug-resistant strains of the TB germ (MDRTB), which may not respond to any known drug. When MDRTB spreads, the population is faced with an incurable form of TB. NGOs and philanthropic bodies may do more harm than good, if they are not cautious enough to follow through the management of each patient to its successful completion and ensure that a cure has indeed been achieved.

Infection vis-a-vis disease

Over 80,000 die of tuberculosis in Bangladesh annually. On a conservative estimate, there are over five lakh (half million) cases of active tuberculosis in the country. The disease is so widespread that hardly anyone can feel entirely safe.

In fact, almost all of us in Bangladesh have been exposed to the primary infection within the first few years of life. Under favourable conditions, one is able to fight this primary infection without suffering from the disease. At the same time, this initial exposure provides one with a measure of immunity against developing the disease on a subsequent exposure.

The main factors, which determine the outcome of the primary infection, are the dosage and virulence of bacteria inhaled, the frequency of such exposures, and the general health and nutritional status of an individual. With poor general health, as a result of suffering from malnutrition or a recurrent, long-standing chronic disease, e. g. diarrhoea in children, *kala-azar*, malaria, anemia, AIDS etc, one is likely to develop tuberculosis on the very first exposure or suffer from a flare-up of a previous infection.

A global emergency

It is no wonder that in April and May 1993 the World Health Organization called upon the member state to deal with TB as a global emergency. It is also in the interest of the most affluent nations that tuberculosis in the developing and economically weaker nations TB is tackled in right earnest, since immigration and international travel have exposed the wealthiest of nations to the hazards of this disease. A significant proportion of case of tuberculosis in UK and USA are seen amongst recent immigrants and the indigenous victims of AIDS.

Thus, no population is entirely safe from tuberculosis. While socio-cultural factors and discreet personal behaviour can limit the spread of HIV infection and AIDS, as yet there is no certain protection against infection by the TB germ. As already indicated, even speaking to an active case of TB may expose an individual to the infection. BCG render some protection to children, but the immunity may not last beyond early adulthood.

Cures help prevention

The importance of curing as many cases of tuberculosis as is possible cannot be over-emphasised, since every case represents a potential source of infection. Every cure helps in reducing the total burden of the disease and its further spread. There in lies the great benefit of making an active search for cases of tuberculosis in a community and treating and curing as many of them as the facilities of trained manpower, ready availability of specific medicines and other resources allow.

It has been estimated that an investment of only Taka four thousand (US $100.00) in tuberculosis control gives a return of 27 years of healthy life — a rather cost-effective undertaking, indeed!

Community participation

It is obvious that community participation in the detection and cure of cases of tuberculosis would be most rewarding. Treatment of TB is a long continued process with four drugs, given everyday of the week, over a period of at least six months. Supervision by a member of the family or the community can ensure compliance. Several sputum-smear examinations are done at intervals to check for the presence of AFB. Treatment may have to be extended in case of TB bacteria are seen in the smears towards the end of the course.

The infrastructure of the Thana Health Complex is a valuable resource for the control of the disease. Direct involvement of trained THC medical officers in the supervision of community health workers in the active search for cases of tuberculosis.

Since the TB Control Programme in Bangladesh has so far been essentially urban-based, the disease still remains a major health hazard. There is strong evidence that the disease has been spreading and now the rural areas harbour bulk of the patients, who have thus far received minimal attention.

The country now has the basic infrastructure to deal with the situation. Several relatively inexpensive drugs are available to effectively treat tuberculosis. Specific regimens of chemotherapy have been tried and found to cure patients, even when administered by trained but illiterate community health workers, through the NGOs over limited rural areas of Bangladesh. Health education efforts need to be further strengthened with a view to bringing suspected patients to treatment at an early stage of the disease. Increased awareness of the serious nature of the disease, would perhaps help in mobilizing the active participation of the community on an extensive scale. Only then will it be possible to halt the further spread of tuberculosis in Bangladesh.

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Tuberculosis Activates Latent HIV

HIV is well known to increase people's susceptibility to TB. Now researchers are discovering that TB may in turn worsen the effects of HIV infection Laboratory studies show that the TB bacterium can activate HIV from a latent state in infected cells. If clinical studies of patients bear out these preliminary findings, they could have important implications for people worldwide who are infected with both organisms.

Zarah Toossi and her colleagues at Case Western Reserve University in Cleveland, Ohio, studied white blood cells that contain latent HIV. The cells were cultured in the laboratory with Mycobacterium tuberculosis, the bacterium that causes TB. Three days after the bacterium was introduced to the cells, they were expressing up to 40 times more of the HIV protein p24, an accepted indication of the presence of HIV, than before. This indicates a much greater level of activation of the virus. The effect seems to be specific to the TB bacterium; other bacterial toxins and proteins did not activate the virus.

Toossi and her colleagues asked whether a messenger protein called tumour necrosis factor (TNF) might be playing a role in the activation of latent HIV by the TB bacterium. TNF is produced by cells of the immune system in response to many infections, including TB. When the researchers added to the culture antibodies that block TNF, the level of p24 produced by the cells dropped 75 per cent, strongly implicating the messenger protein in the process.

It is not particularly surprising that the TB bacterium itself activates HIV, since other infections such as influenza virus are known to worsen HIV's effects. But few other infections are as widespread at TB. "With one-third of the world infected with TB this could affect a big segment of the population," says Toossi. However, she stresses that the laboratory findings must be borne out in people before any firm conclusions can be drawn. If studies among large numbers of patients show that those infected with both HIV and TB progress to AIDS more rapidly than those with HIV alone, it may be important to alter the treatment of co-infected patients, says Toossi. For example, drugs already exist that block the effects of TNF.

But other researchers warn that it may be very difficult to measure whether TB actually speeds up HIV's effects in co-infected patients. This is because without proper treatment, TB itself kills many people with HIV much sooner than the virus could have done so. — PANOS

Crack Fuels AIDS

by P G Ortiz

AS public health officials in Puerto Rico struggle to contain the spread of HIV, they face a new threat: the growth in crack use — the highly addictive smokable form of cocaine.

Researchers say the drug leads to hypersexual behaviour — heightened sexual craving — among novice smokers, while people addicted to crack, especially women, will tend to sell sex more cheaply and frequently than other sex workers to obtain the drug, rarely using condoms.

Crack smoking : crack-specific prostitution is a potentially explosive mode of HIV transmission

"There is no question," says state epidemiologist John Rullan, "that crack is a new and dangerous component in the AIDS scenario. We now have to look at crack with as much vigour as we have been addressing injecting drug use, if we are going to have an impact in stopping and preventing this disease."

With 13,223 reported cases in the island, AIDS is the leading cause of death among men aged 26-49 and women aged 25-39 in Puerto Rico.

"There's a serious problem of HIV transmission and high levels of sex risk among crack users," says Hector Colon, director of research for the government's Mental Health and Anti-addiction Services Administration. "Our fear is that HIV transmission among crack smokers may become the bridge between the virus pool in the drug-injecting population and the general heterosexual population."

Several studies in Puerto Rico seem to substantiate Colon and Rullan's concerns. One study found a 20 per cent HIV infection rate among women crack smokers, and 11 per cent among men. The research — on a sample of 260 crack users — also found a high number of men and women failed to use condoms when having sex.

Another study found a proportionately higher number of women within the crack-smoking population than within the drug-injecting population. A significant finding was that crack-using women are more likely to sell sex in exchange for crack or for money to buy the drug.

According to Jose Quiles, of the Central Office for AIDS Affairs, and Transmissible Diseases, "crack-specific prostitution" is a potentially explosive mode of HIV transmission because the urgent need for more crack often drives prostitutes — both male and female — to have unprotected sex.

Quiles points out that novice smokers usually have sex for pleasure — enhanced by the drug — while addicted crack users generally do it out of necessity. "At this stage," says Quiles, "they'll sell their bodies to anyone — at any price."

One woman sex worker — who wishes to remain anonymous — said she had oral sex with a man for 50 US cents — the amount she lacked to purchase a US$6 vial of crack. The street value of crack varies from US$3 to US$6 a vial.

Although there are few figures on the actual number of crack users in the island, indications of an epidemic are based on the growing number of people seeking treatment in the public rehabilitation system. Between July 1990 and June 1992, the last date for which statistics are available, the crack smoking population represented the fastest growing among all drug users seeking treatment, tripling from 5.2 per cent to 18 per cent.

Increasing evidence of crack's popularity in the streets also comes from police records, which show that crack is more readily available at drug dealing points than either marijuana or cocaine in its powdered form. One narcotics agent based in Bayamon, the island's second largest city, observed that crack was the most common drug confiscated during operations.

Crack's increasing popularity, particularly among women, has significant implications for Puerto Rico, where HIV transmission and AIDS have been overwhelmingly related to drug use. In the US as a whole, injecting drug use is linked to 25 per cent of all reported cases of AIDS. But in Puerto Rico, it accounts for 54 per cent of cases. If sexual partners of drug injecting users are added, as well as babies born to women infected by this group, the figure rises beyond 70 per cent.

— World AIDS

Taking on the Winning Mosquitoes

Dr Sanjiva Wijesinha writes from Hong Kong

Hot on the heels of successful trials of an anti-malaria vaccine come encouraging reports of drug treatment based on a Chinese herb. Gemini News Service reports that several companies are in the final stages of getting the new drug onto the market.

The fight against malaria

SEVERAL companies are planning to market drugs based on an ancient Chinese herb which may have an important role in the treatment of malaria.

The outcome of the trials on the Thai-Cambodian border have been welcomed by the director-general of the World Health Organization (WHO), Dr Hiroshi Nakajima, as "a dramatic step forward for health."

The results confirmed that the extract from the herb *qinghaosu* was three times more effective than Quinine in preventing deaths from drug-resistant strains of the disease. A similar study conducted in Myanmar (formerly Burma) by Professor Tin Shwe last year demonstrated that even in deadly cerebral malaria, the potential new drug was more effective than Quinine in reducing mortality.

It clears malaria parasites from the human bloodstream faster than any other known anti-malarial compounds.

But WHO is urging caution in the use of qinghaosu extracts in order to prevent the rapid rise of resistance, which is a key factor in the current resurgence of malaria in many parts of the world.

Qinghaosu was first mentioned as being of therapeutic use in a Chinese book, *Prescriptions for 52 kinds of Disease*, written more than 2,000 years ago.

Used since then as a traditional remedy for fevers, it was only in 1972 — in the midst of the Cultural Revolution — that Chinese researchers conducting a traditional medicine survey identified the active ingredient of the plant, artemisinin, as a potent cure for malaria.

When WHO became convinced that identification of the active ingredients of qinghaosu represented a breakthrough, it started negotiations with Beijing in an attempt to organise full-scale clinical testing, sound manufacturing practices and rights of-use in the developing world.

Says Robert Walgate of WHO : China understandably was proprietorial — behaving like a drug company — and the negotiations collapsed."

So WHO pursued its own line, helping to develop two similar chemical derivatives. Artemether and Arteether. The first is expected to be registered in France next year by a French drug company, while Arteether is undergoing clinical trials by a Dutch company.

Other companies, including firms in China, Vietnam, and Thailand, are racing to market artemisinin products for oral and intravenous use.

Malaria in many parts of Asia is becoming resistant to standard drugs such as Chloroquine, Amodioquine, Primaquine, Mefloquine and even Quinine.

Artemesinin has been shown to be remarkably free from side-effects, but unless the drug is continued for a full course of seven days, the malaria parasites can reappear in the blood.

Since most patients are cured of their fever (the main symptom of malaria) and recover within a couple of days of starting the drug, there is a danger than they will not complete the full course of treatment. If Artemesinin is taken only for three days and stopped, as many as one-third of patients will suffer a relapse of their malaria symptoms within 30 days.

Not only does this hinder the cure of the disease in individual patients; it can also lead to malaria parasites becoming resistant to Artemesinin and its derivatives.

To identify the best dosage and treatment schedules and to encourage patients in poor and remote regions to take complete courses of the medicine is the crucial

Most research on Artemesinin has been done in the developing world — Vietnam, Thailand, China Myanmar and Cambodia — where malaria is a pressing problem. If qinghaosu had been the source of drug that had the potential to cure a Western disease rather than malaria, which essentially affects developing countries, it might have been given more urgent attention by the world's medical establishment.

— Gemini News

Breastfeeding : Survival Issue for Millions

by Firoz M Kamal

THE question of breastfeeding is immensely important for many reasons in Bangladesh. It alone can save not only millions of dollars each year by reducing the import bill, but can save million of lives as well. For this poor country, it indeed amounts to a lot. This way the nation can accomplish two formidable tasks — saving lives and saving money — almost free of cost. It exhausts little of our physical strength, natural resources or intellectual vigour.

In the context of the country's poor economy and health-care amenities, it can help incredibly to improve its mortality and nutritional status. It needs little to understand that the national health status even in these closing days of the twentieth century isn't less awful. Its infant mortality rate (IMR) is still ten times higher than a developed country, almost one in ten infants die before reaching their first birth day. Its maternal mortality rate (MMR) is more than two hundred times higher than a Scandinavian country like Sweden, even two times higher than the neighbouring countries. Nearly half of all babies born alive are of low birth weight (less than 2500 grams). Thirty five per cent children under 6 years suffer from severe malnutrition, 94 per cent of all children suffer from some degree of malnutrition. The calorie intake has decreased from 2300 Kcal/day/person in the mid-1960 to less than 1900 Kcal/day/person in 1988, much below the WHO minimum. About 30,000 children become blind each year from vitamin-A deficiency. Diarrhoeal diseases still wield much havoc in this poor land. And no less appalling, improper or inadequate breastfeeding contributes a lot to aggravate this dismal health situation. Various studies give ample evidences to it. So the message is clear. It is the time to make serious efforts for promoting breastfeeding, at least its importance as a national issue must be duly conceived at all levels. It shouldn't be viewed as a mere option of child rearing or an issue of economic austerity, but needs to be fully realised as a question of life and death for millions. Nor it's a mere budgetary matter for saving foreign currencies draining out of our economy. It's rather decisive to ensure healthy growth of our future generation. It relates directly to our own survival as a healthy nation.

Academics have much controversies on many issues, but none is averse to breastfeeding. Breast milk is the most ideal food for the infant, it is considered the first immunisation of the child. No child survival project can properly work, nor can attain any commendable success by implementing programmes like distributing VAC (Vitamin A capsule) or increasing immunisation coverage, these are only complimentary but not the substitute of a child-rearing need like breastfeeding.

Every mother — rich or poor, short or lean, young or older — possesses enough milk to feed her baby exclusively for five to six months. It contains all ingredients that are essential to promote child's growth. Breastfeeding makes no use of water, therefore, saves children from water-borne diseases like diarrhoea, dysentery, cholera and other killers in childhood age. Research from Brazil reveals that non-breastfed infants were 11-16 times more likely to die from diarrhoea, 3.6 times more from respiratory diseases and 2.5 times more from other infections when compared to breastfed infants. A study in Bangladesh indicates that breastfeeding was associated with a 70 per cent reduction in the risk of severe cholera, the protection was evident in children up to 30 months of their age. Another study finds that an exclusively breastfed child has 25 times less chance of death from diarrhoea and 4 times less from ARI (Acute Respiratory Illness) than a bottle-fed baby. It has also been documented that diseases like asthma, cancer, lymphoma and diabetes occur less often in breast-fed children.

The nation faces some economic imperatives too. Not only for development projects, even for its very survival strategies the country has to rely heavily on foreign aids. So the enormous cost of formula feeding adds some serious budgetary impediments.

For a six-month-old infant, the average monthly cost of formula feeding comes to US 22 dollars — an amount equal to or greater than the average monthly per capita income in many third world countries. At a hospital in the Philippines, promotion of breastfeeding resulted in an annual savings more than US 100,000 dollars. The testimony also comes from the USA. In June 1990, the Director of the Tennessee Breastfeeding Project calculated that if all new mothers breastfed for even the first month of their baby's life, the USA government would save 30 million US dollars on infant formula in one year alone. A Bangladeshi family has to spend at least Tk 1,000 per month to adequately feed a baby of three months with infant milk formula. A poor mother seldom can afford to purchase the required amount, they rather dilute the mixture with contaminated water and serve with unsterilised feeding bottles as her family possesses little fire-wood to boil water or sterilise bottle. So, the whole process remains highly susceptible to bacterial contamination. In Bangladesh, it was found too, that the lactational infecundability plays the most prominent role as a fertility reducing factor. It causes lactational amenorrhoea, so saves women from menstrual blood loss. In a country where anaemia is highly prevalent in females, especially in reproductive age, such absence of menstrual bleeding for six months contributes substantially in correcting the pre-existing anaemia.

Even in the near past, almost all mothers were used to breastfeed their babies. In recent days, the trend seems to be alarmingly declining. Women of both the urban and the rural areas are increasingly getting influenced by lucrative advertisements for powder milk. Even some medicalpractitioners are found very susceptible to it. In both the rural and urban areas, the old practice of colostrum *(the breast milk that comes first after the delivery)* rejection still remains unabated. A recent study in Dhaka and Narayanganj found exclusive breastfeeding *(nothing other than breast milk for first 5 months)* virtually non-existent. And it owes much to lack of proper health education. Little knowledge is not only very corruptible by lucrative propaganda, it seldom prompts one into desired action. For that, it must attain a certain level at the very outset.

Likewise, the knowledge on breastfeeding can't evolve as an effective practice unless it reaches the desired level. And here lies the problem in Bangladesh. It needs little expertise to understand the merits of breastfeeding, most of our people already know it. But its inadequacy exists almost at all levels. Such knowledge failed to work as an effective motor in most mothers, therefore, failed to lead them to its full practice. Even the country's policy makers failed to realise its real worth, they too denied its importance as a priority issue at the national level.

The outcome of all these negligence is no less affecting.

Even the country's life-style setters — the intellectuals — couldn't fully fathom its role.

A great number of our educated women do not adapt breastfeeding in their so-called modern life-style. This very situation gives much impetus to rethink the whole profile of our so-called modernity indeed.

Thus, colostrum rejection becomes a common practice in rural Bangladesh. Whereas, it is invaluable for child health. It protects baby against neo-natal infection as it is rich in anti bodies. This is why it is suggested to start breastfeeding even before the cord is cut, not later than the first 30 minutes. On the contrary, a very wrong practice has evolved to take its place. A newborn is commonly fed with glucose water, honey or other liquids until mother's milk starts flowing adequately. In most cases, it is no less than three days. Thus infants are deliberately deprived of very essential factors at the very start of their life.

So the message is clear. It is the time to make serious efforts for promoting breastfeeding, at least its importance as a national issue must be duly conceived at all levels. It shouldn't be viewed as a mere option of child rearing or an issue of economic austerity, but needs to be fully realised as a question of life and death for millions. Nor it's a mere budgetary matter for saving foreign currencies draining out of our economy. It's rather decisive to ensure healthy growth of our future generation.

CORRIGENDUM

Poverty Alleviation through Self-reliance

In the last line of the sixth para of the above article published in the "Development" page yesterday, the rate of recovery should be read as "99.50 per cent" instead of "93.81 per cent."