Rickets: Posing a Serious Threat in Chakoria

by Md Shahidul Haque

WITH a view to prevent permanent disability of the victims of the 1991 tidal surge and cyclone at Chittagong and Cox's Bazar, Social Assistance and Rehabilitation for the Physically Vulnerable (SARPV) went there to perform relief work in May 1991. It was the first of its kind to do relief work only for the disabled people to save them from the curse of life-long disability.

SARPV rendered various rehabilitative services to 799 disabled people and also gave primary treatment to 1000 injured persons. Out of 799 disabled people who were served, 45.31 per cent were below 10 years in age and 18.52 per cent of these children were victims of rickets.

Observing this severe situation of rickets, a survey to detect the prevalence of rickets at the village of Kakara and Boroitali under the union of Cheringa in consultation with Dr John E Bullock, an orthopaedic surgeon from the Memorial Christian Hospital (MCH), was planned and conducted. Total population of these two villages were 17,000 and 50 per cent of them were of below 15 years in age. It was found that 1.09 per cent of these children were suffering from rickets. It was informed to the local reporter at Lama of a leading vernacular daily and accordingly a report was published on its 14-02-92 issue. Another report was published under title "Save the next generation of Chakoria, from the curse of rickets" in one of the English dailies on 20-03-93. In these two reports, it was appealed to both the Government and other non-government agencies to take necessary urgent steps. Also SARPV-Bangladesh financed orthopaedic surgery for some children suffering from rickets with the help of Dr John E Bullock and his colleagues at MCH. As the treatment was very expensive and rickets patients were increasing at an alarming rate, so it was difficult for any organisation to continue it. Saving these children needs repeated surgical intervention, unless the cause of rickets is eradicated, so there was an urge for in-depth study. So, World Health Organization (WHO), and organizations working for children such as Save the Children Fund (SCF)-USA, SCF-UK, ICDDR-B were requested for taking necessary actions on this issue.

Meanwhile, Ruhul Amin, First Secretary of Bangladesh Embassy in France was informed of this and he personally took an initiative to consult with AEM, an organization working for the children. AEM sent a team of four to examine the matter.

Brigadier M A Hafiz of WHO attended a workshop conducted by SARPV-Bangladesh on 3rd and 4th December on the occasion of the World Disability Day 3rd December of 1993. He assured that he would take necessary steps. Later, Bangladesh representative of WHO A N A Abeysundare issued a letter to the Director General of Health, Mohakhali; Joint Secretary, Ministry of Health and Family Planning; the Director, IEDCR-Dhaka; the Director, Primary Health and Diseases Control-Dhaka; Director, Institute of Public Health and Nutrition, Mohakhali-Dhaka; for taking necessary steps. SARPV volunteered field activities for identifying and investigating the rickets patients at Chakoria. In a report of April 19th issue of a widely circulated vernacular daily, the senior scientist of IEDCR and head of the rickets survey team Dr Mushtaq Hossain discussed their findings that deficiency of vitamin D, calcium and phosphate in food the children were taking was the primary cause of rickets at Cox's Bazar.

The same view was expressed by the French expert team consisting of four members — Dr Jean Paul, paediatrician and member of the World Physician Council; Dr Simon, biologist from AEM; one agronomist and the team leader. SARPV facilitated this team to cover Chakoria Ramu, Cox's Bazar in November 1993 for a brief study. Information on food habit of families having rickets patients and sample of water, soil of these area were collected. X-rays of rickets patients were examined. The team identified that —

- Children suffering from rickets have no significant vitamin-D deficiency in their body but the vitamin seems not to be functioning.
- Their daily food like rice lacks in minimum calcium necessary for health.
- Presence of aluminium in water is very high.
- Soil is very much acidic.

The findings were also shared with Dr Eric Laroche, Chief of the Department of Nutrition and Health of UNICEF, Dhaka. For future study on this issue the French team conducted another comprehensive survey in the 1st week of March 1994 at Chakoria.

It is feared that the problem may not be only with Chakoria, rather it may be a problem in all the areas in and around the coastal belt of our country. It may also be due to environmental degradation which is forcing our future generation to a life fraught with physical ailments and various health hazards.

A Question of Life and Death

*Every year, tens of thousands of people are infected with HIV through blood or blood products. And the situation is getting worse, not better. **Phyllida Brown** reports on the battle for clean blood.*

A decade after the discovery of HIV, an optimist might have hoped that the world's blood supplies would be free of the virus. After all, blood can be tested for HIV antibodies and, unlike sexual encounters, transfusions can be supervised and monitored by governments.

What is more, there are compelling economic reasons for making blood safe: of all the routes by which HIV spreads, blood-borne transmission has been show to be the most cost effective to prevent. Yet in 1994, unacceptably large numbers of people are still being infected through contaminated blood and blood products in the developing world. Experts say the situation is not improving and may even be getting worse.

The World Health Organization estimates that something like a million people — between 5 and 10% of all those infected with HIV worldwide since the beginning of the pandemic — can blame their infection on contaminated blood and blood products. In some developing countries, the proportion is probably much higher. For example, in Zaire in the late 1980s, about one-fifth of young children who had received repeated blood transfusions to treat anaemia caused by malaria were HIV positive. They were unlikely to have acquired the virus by any other route than blood.

Banking blood

Last year, scandal erupted in Germany when it emerged that three people had been infected by plasma products made by a company that had failed to follow the proper procedure for testing for HIV. Millions of Germans were offered free HIV tests and panic gripped the country. But despite hiccups such as this, the blood supplies of the industrialised nations are now considered to be comparatively safe. It is the developing world which bears the far greater burden.

In Western Europe, North America and the richer Asian and Pacific countries, blood is collected largely from volunteer donors and banked for future use. Even so, many of these countries lack a national, coordinated system but instead rely on a patchwork of services. In the US, the Red Cross is responsible for about half of all blood supplied.

In the poorer countries of South Asia and most of Africa — with exceptions such as South Africa, Namibia, Zimbabwe and Botswana — much looser systems operate with a mixture of hospital-based and centrally-funded services. Often very little blood is banked and most transfusions are obtained ad-hoc from emergency donors, often relatives.

In 1993, WHO estimated that 91 million units of blood — one unit is 450 ml — were collected worldwide, nearly 65 million of these in industrialised countries and the rest in the developing world. Another WHO estimate suggests that most industrialised countries have about 50 units of blood for every 1,000 people, compared with 2.2 units for every 1,000 in the developing world.

The uses of blood in the developing countries are often different from those in the North. In sub-Saharan Africa, blood is given mainly to treat anaemia caused by Malaria — a problem which is now worsening with the spread of drug-resistant malaria parasites — and to women suffering complications of pregnancy and childbirth.

A blood-borne epidemic

A lack of information makes it extremely difficult to say just how big the burden of blood-borne HIV infections is in the most disadvantaged regions of the world. WHO's global estimate can tell us nothing about the number of new infections occurring daily. Nobody knows how many there are, and studies to document them are notoriously difficult to do. But Jean Emmanuel, scientist in blood transfusion systems at WHO's Global Programme on AIDS, fears that the number is likely to be increasing wherever the virus is already at large in a population and where political and economic instability assist its spread. From Somalia to Cambodia, civil war and poverty are fuelling the blood-borne epidemic.

Even if tests are affordable, the supply often runs out, or gets stuck two days' journey away when roads become impassable. Three-quarters of institutions surveyed in one rural province of a central African country regularly experienced shortages of test kits, blood collection bags and other equipment. One well-known study in Kinshasa, Zaire, found that fewer than one-third of transfusion centres were provided with test kits on a regular basis. More than a quarter of the units transfused had not been tested for HIV at all, in a city where an estimated 1 in 20 units was infected. Record-keeping is also desperately poor in some areas. The same study found that more than half of the centres had no written information on their stocks or their transfusions.

"Every transfusion poses a risk so we should do it only if it is absolutely necessary."

Blood and many of its breakdown products are potentially deadly sources of HIV infection. A single sexual act with an HIV positive partner may carry a risk of infection as low as 1 in 1,000, although this risk in known to be notoriously variable. By contrast, the chance of becoming infected from a unit of contaminated blood is more than 90%. Once infected through blood, a person may also develop AIDS more quickly than one infected through sex, probably because the amount of virus received into the body is greater.

Testing times

But despite the clear incentives to make blood safe, there has been little progress. Why? An obvious answer would be that it simply costs too much to provide safe blood. In some African countries, the health budget is as little as $3 per person per year, while the average cost of a unit of blood ready for transfusion is estimated at about $30. At face value, this looks like an impossible drain on the country's purse. But Emmanuel at WHO stresses that because not everybody needs a blood transfusion, the total cost of providing blood is estimated to be only about 1.5% of the health budget.

Screening blood for HIV — as well as for hepatitis viruses and others — is nevertheless expensive. ELISA tests, which detect the presence of antibodies to HIV, cost at least 65 US cents each — even with bulk-purchase deals negotiated by WHO.

In practice, many of the test kits used in Africa are provided as a part of research programmes funded by international bodies and NGOs in the industrialised countries. As interest in AIDS has begun to wane in the West, funding for some research programmes is under threat.

But funding and the provision of test kits are not the whole story. A good blood transfusion system needs much more, says Emmanuel at WHO. First the system must find safe donors, and keep them. Then the service must meet high technical standards for transporting, storing and documenting all the blood collected, as well as testing it reliably and accurately. Finally, the doctors who actually give the blood to patients must use it appropriately.

To pay or not to pay

The recruitment of safe donors is at the heart of a good blood system — and it is also one of the toughtest challenges in any country. In many countries whose economics are restricted, including some in the former Eastern bloc, it is a deeply-rooted tradition for people to sell, rather than give, their blood.

Even in the industrialised world, pockets remain where blood donors are rewarded. In Germany, some large municipal and university hospitals remunerate their donors with money or perks such as cinema tickets. "We think this is absolutely unacceptable," says Frits Kothe, head of the blood programme at the International Federation of Red Gross and Red Crescent Societies (IFRC) in Geneva.

The IFRC, WHO and other international bodies are strongly opposed to the custom of paying for blood because donors who are paid are less likely to exclude themselves on the basis of risk and because infections with many blood-borne agents including HIV are notoriously more common among paid donors than among volunteers. In the US, paid donors were seven times more likely to be infected with HIV than voluntary donors; one study in Mexico found the ratio even higher, at 70:1. Another study in Bombay, India found that 172 of 200 professional blood donors were HIV positive.

Over-prescription of blood by clinicians is another important issue. A shockingly high proportion of HIV infections spread by blood might be avoided if doctors stopped giving unnecessary transfusions. Up to half of the blood transfusions around the world each year could be avoided, according to Emmanuel at WHO.

In particular, may doctors give a single unit of blood to patients with anaemia or before surgery. The practice continues in industrialised countries as well as in the developing world. But researchers say that the benefits to the patient are not so significant that single units are worth transfusing into adults. A study in New Delhi, India found that 1,527 of 2,297 units transfused over an eight-month period in one hospital were single units. Most were for routine surgery.

Another often-unnecessary use of blood is to replace lost fluid volume. Solutions known as crystalloids are often a safe alternative to blood in these cases. In some communities in India, doctors too readily offer "cosmetic" blood transfusions to patients who are merely off-colour, according to Ramesh Goud of the SOS Medical and Educational Foundation in Nasik, near Bombay. The international trade in blood and blood products has also contributed to the spread of HIV. In the early 1980s, European haemophiliacs became infected through imported American factor VIII. Doctors in Lebanon are now worried that European blood products imported in the 1980s during the country's civil war may have contributed to its growing AIDS problem. And sloppy practice by plasma companies who pay donors to supply them with their raw material has created scandal in Europe.

However, Emmanuel believes that trade in substandard products is comparatively small in developing countries. Some 90% of the transfusions in developing countries consist of whole blood, which does not concern the companies who trade in blood products. However, no one rules out the risk of bad practice. In India, for example, it has been claimed that companies were taking blood from professional donors without testing as recently as 1992.

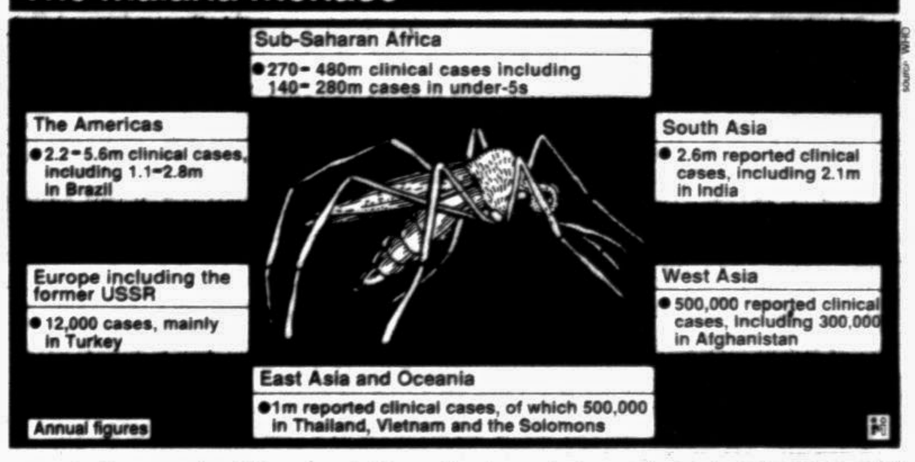
In the long term, the only hope is to educate communities to accept a tradition of voluntary, unremunerated blood donation, says Emmanuel. And general improvements in health would reduce the need for transfusions if countries could find the money, political will and economic conditions to achieve them.

The old friends of this virus — poverty, ignorance and oppression are as effective in contaminating the blood supply as they ever were in aiding sexual transmission. — PANOS

Prof Patarroyo's Third World Vaccine Wins Another Round

Robert Walgate writes from Geneva

Resistance to anti-malarial drugs is spreading and many spraying programmes have collapsed. But at last comes good news in the battle against a disease that kills up to three million people a year and affects 300-500 million others.



A potential malaria vaccine has passed two major hurdles in its first trials in Africa, where the disease kills and estimated one million children a year. An Asian trial is underway in Thailand.

The breakthrough offers hope in the face of the spread of resistance to existing drugs, particularly in Southeast Asia and Latin America.

Complete or partial resistance to chloroquine has spread to all endemic areas. New and more expensive drugs have been introduced in the fight against the 300-500 million clinical cases of malaria recorded every year, but resistance even to these has developed at an alarming rate.

So there has been great excitement over the findings of scientists in Tanzania that the new made-in-Colombia vaccine creates a strong immune response in children and adults, and has no serious side-effects.

Between five and 20 other malaria vaccine candidates are lining up for trials, illustrating what may be true significance of the Tanzanian result: that for the first time scientists are ready to get potential malaria vaccines out of the laboratory and into the countries where the disease is a real killer.

This represents a fundamentally new phase of malaria vaccine development.

"The Tanzania test demonstrates that we are over half way to developing the first ever effective malaria vaccine," says Dr Tore Godal, director of the UN-and World Bank-backed programme for research and training in tropical disease (TDR). "We are now bringing the decades of sophisticated, laboratory research to fruition, in careful, properly monitored human field trials."

Godal urges the research groups, private companies and public institutions working in the field to "forget competition and combine in a global effort of create an effective vaccine."

There had been fears that the controversial "SPf66" vaccine, developed independently by Colombian scientist Manuel Patarroyo, might have caused severe reactions in people highly exposed to malaria, or that it would have no effect on an already primed immune system.

Both concerns have now been proved unfounded. So independent trial monitors have given the go-ahead for tests on 600 children aged between one and five years to see if the immune response created by the vaccine can significantly reduce malarial attacks.

The full effectiveness of the vaccine in Tanzania should be known later this year, according to an announcement by the TDR, one of the funders of the Tanzanian trial. Anticipating success, the Colombian government has offered to host production facilities, and Prof Patarroyo has predicted an eventual price of under $2 per treatment.

He has offered patent rights on the vaccine to the World Health Organization, and negotiations on the rights are currently underway.

Even if the final results of the trial — and that of other trials of the same vaccine now underway in Thailand and Gambia — were a total success, the earliest the vaccine could be available for widescale use would be 1998.

More pessimistic estimates run to the year 2005, or never, according to the exact impact of the vaccine on disease and death, on the willingness of donor governments to pay for development of the vaccine, and on the eventual real price and sales potential among tourists and the better-off.

Then there is the problem of delivering the vaccine to those needing protection — principally, young children in Africa; people without immunity moving to malarial areas, such as families involved in resettlement schemes in Brazil, Cambodia and Vietnam; and people in areas prone to unstable epidemic malaria, such as Madagascar.

WHO is convening a meeting in the middle of next year — the date of completion of all current trials — to decide how to proceed.

Perfect results would indicate immediate production and distribution. Less than perfect might indicate the need for further development work. Development in any case might be needed to simplify the administration of the vaccine, which currently requires three shots 30 and 150 days apart.

The SPf66 vaccine created controversy from the outset because of disputes over the quality of its initial clinical testing, its developing country origin outside the charmed circle of the big research programmes in richer countries, and its innovative design.

It is a clever combination of synthetic peptides derived from the malaria parasite, which Patarroyo discovered by their ability to induce immunity in monkeys.

A saga of disputed human trials led finally to a fully-controlled, international-accepted trial in Colombia, the results of which, in 1992, showed that SPf66 could produce a 22-77 per cent reduction in malarial attacks, with the biggest reduction in the young very old.

However, malaria transmission in Colombia is slight. The question then was whether the result be repeated where malarial transmission is intense and death and disease rates high.

The Tanzanian trial is a much move severe test for the vaccine, as are those in Gambia and Thailand. A person in the trial area of Kilombero suffers an average 300 bites a year from malaria-infested mosquitos, which carry the disease from person to person.

In the rainy season in February and May the number of infected bites may rise to 20-25 a night These figures are about 100 times higher than in Colombia.

As a result, at any moment more than two out of three people in Kilombero are infected with malaria parasites.

Moreover, some 15-20 per cent of the parasites in the area already show resistance to the front-line drug against malaria attacks, chloroquine.

There is no doubt that in Kilombero — and in many other parts of the world where malaria is equally severe — a vaccine would be a welcome addition to the crumbling armaments against the disease.

— *Gemini News.*

ROBERT WALGATE is communications officer for the UNDP/World Bank/WHO special programme for research and training in tropical diseases.

Ignorance and Bigotry will Not Take Us Anywhere

by Selina Husna Banu

TWO years back, one evening a girl of 12 years was brought to the hospital by her mother and her grand mother. I was on evening duty, and she was sent to me. Looking at the girl my first impression was, what could be the problem to a seemingly healthy child like her. Because in the hospital usually we receive patients in serious condition, many of whom are already treated by village *Fakir* and *Kabiraz*.

The mother informed that her daughter had been under the sinister influence of some 'bad winds'. I asked myself, what that may be — an attack of bad wind in her word is that the patient turns her neck first then the whole body to right side, becomes stiff and produces some sound which persists for a few minutes then she goes to sleep.

They tried the remedies prescribed by the village *fakir* but in vein. Now the mother is afraid that no one is going to marry her daughter.

I couldn't decide whether I should keep her for admission or not, so I took the advice of one of my senior colleagues, he inquired about her age I told him that she was 12 years old. He replied, "It's nothing but a case of hysteria." The girl was good looking with no neurological or developmental impairment, probably that was the reason my colleague diagnosed it as a hysteric attack. Actually it was a case of epilepsy.

Today, after two years of that incident and my one and half years of working in the depertment of Paediatric Neurology and Developmental Paediatrics, I now realise that my inability to diagnose that epileptic case was due to lack of exposure in the specific field of child neurology. From my experience I feel now why it is so important to work in a special unit.

In the past, I did not know that so many cases of brain and nervous system, so many kinds of metabolic disorders, congenital abnormalities and developmental impairments prevail in our population. Working in this special unit and facing every day, the ever increasing number of patients with neurogenic disorder, I wonder how many more are still unidentified, uncared and are being misunderstood by us.

There are so many children stigmatized as mentally retarded, handicapped or abnormal, actually their ailments might be curable, many of them could continue life as an intelligent worker in the society if they get the proper treatment in proper time. For example, cases of congenital hypothyroidism, mild to severe hearing impairment, different types of epilepsy are curable. There are many hereditary disorders occurring from marriage within the same family, which may produce children of genetic syndrome. People does it out of ignorance. They do not receive any genetic counselling.

The point is, who will convey these valuable informations?

- It is our duty to provide this special service to our population, specially to the majority living in the rural areas.
- We should have more facility for special unit in order to identify the cases of neurogenic disorder, developmental disorder, congenital abnormalities, different sequelies of meningitis encephalities.
- We should give the family the knowledge about the disease, its natural course and the preventive measures.
- Finally, we should improve our own knowledge through services to the suffering people.
- We might not be able to remove disability from the society altogether but we can atleast prevent it to some extent and can reduce the sufferings by counselling. We can minimise their anxieties through making them aware of their real health condition.

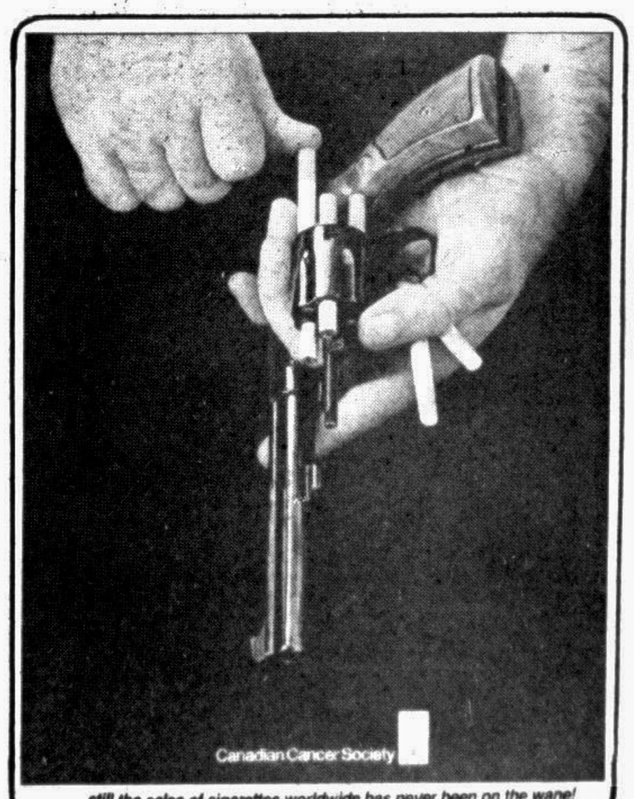
As a physician, I go through so many experienceses everyday, many of them makes a lasting impression on my mind, some do not. If I were asked to recollect some of my professional experiences, at once I can see the poor, helpless faces of the countless mothers of my patients and I cannot but feel bad for them. Sometimes I ask myself if I can really help them? I get a prompt answer "no, you cannot take the whole responsibility, it is not your duty alone". Then I come back to reality. As medical students we were always taught the way how to treat our patients, how to reduce the pain, the sufferings of our patients. But how can I reduce their sufferings who cannot complain, cannot protest? I can treat the disease at present but I think there remains a great job to make people aware to abstain from making a child disabled/impaired physically or mentally out of ignorance. We should try by all means to prevent the known social causes.

Once a well nourished boy child of eight months was sleeping on his mother's laps. I was ready to write the complaints of the mother as my patient can't express his own feelings. The mother said that her family did not allow her to take the child to a doctor, rather they forced her to go to the village *Fakir* to treat her convulsing child. Because they said it was a disease that resulted from an satanic influence of the devil on the mother, which cannot be cured by a doctor, They tried for eight months, finally in vein! At last when she came to the Shishu Hospital, the child had already repeated attacks of severe convulsions that went without appropriate treatment and caused the brain of the child serious damage.

It was also a case of epilepsy, which is a disease of the brain, like any other chronic disease of other organs of the body. It occurs as a result of an excessive electric discharge from the brain. It might have many underlying causes, some are curable permanently, some may not be. A large number of cases result from preventable causes.

An educated mother living in Dhaka never visited a physician during her pregnancy.

During her prolonged labour stage, instead of taking her to an obstetrician she was kept home and the child was born without spontaneous respiration. After two weeks the child developed epilepsy, which is an inevitable result of a difficult or prolonged labour in most of the cases. But this mother has been blamed by her family members for the child's illness and was told that she has some fault in her blood. Which was obviously not true. Inhibitions and bigotry such as these must be removed before we can ever think of a nation consisting of people with sound health.



. . . still the sales of cigarettes worldwide has never been on the wane!